



John O'Leary talks to **GEORGE WALDEN**, the new DES minister responsible for higher education, who is likely to be less sympathetic than his two predecessors but is still convinced of the value of universities and polytechnics (page 10)

History versus the rivet counters: Francis Evans discusses the **ENGINEERING** classics of the past and their value in teaching about design (page 11)

The politics of science: Howard Temperley explores the UEA archives of **SIR SOLLIE ZUCKERMAN**, wartime scientist and member of the postwar great-and-good (page 12)

Whose news? P.A.J. Waddington reviews two new books on the **MEDIA**, a critique of the influential Glasgow group's attack on the impartiality of television news and former *Guardian* editor Alastair Hetherington's study of newspapers and television (page 16)

Plato, Mill, Bertrand Russell, A.J. Ayer are among the subjects of new books on **PHILOSOPHY** (pages 18-22)

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The Scottish universities by an act of courageous foresight can bring about a new beginning in higher education in Scotland, a new beginning that may establish an irresistible example for its larger southern neighbour. Or by an act of complacent cowardice these eight universities can condemn higher education in Scotland, and almost certainly throughout Britain, to a decade of bickering attrition and unplanned decline. The issue of course is whether or not they accept the recommendation in the pre-Christmas report of the Scottish Tertiary Education Advisory Council that they cease to be funded and planned by the University Grants Committee and be funded instead through a Scottish Higher Education Council responsible to the Scottish Education Department.

Hold on a minute: it's not that important. This will be the reaction of many, and not just those living in the basin of the Thames who find it difficult to accept that anything happening as far north as Scotland can possibly have any general British significance.

Even within the SED there is a reluctance to allow the STEAC report to ride or fall on this single recommendation to transfer funding and planning responsibility for the Scottish universities from London to Edinburgh. Of course the SED would like the universities to come over but officials there point out that there are many other recommendations in the STEAC report that are unaffected by the universities' ultimate decision. The reduction of teacher training capacity by closing three colleges, the enhancement of the role of the central institutions, perhaps by grouping some in a Scottish Institute of Technology, perhaps by official encouragement to them to conduct more research, a new review of future student numbers in the light of Scottish employers' demands for skilled manpower - there is more than enough to keep the SED busy without bothering about the universities.

Yet the attitude of the universities remains the key. At a practical level the rationalization of teacher education and the development of the central institutions with more difficult if no proper planning regard can be taken of what is happening in the universities. At a political level the symmetry of the STEAC report will also be upset if the universities stay out: the SED might be prepared to contemplate loosening the reins on the central institutions if the universities could be brought into the planning net by establishing a higher education council.

Sadly the universities are already beginning to get chilly feet about the STEAC plan. Aberdeen is definitely against. Edinburgh rule presumably is seen as even less attractive than London rule in Scotland's north-east. St

Andrews and Dundee are also likely to vote to stay out. Glasgow and Edinburgh are so big and opinions on the STEAC report so various that the formal university positions here are less significant. Nothing much has been heard from Heriot-Watt. Stirling's retiring principal is a devolution man but the university at large shiveringly contemplates its future. Only Strathclyde seems certain to say yes to the STEAC proposals. So although opinion in the universities is still volatile and likely to become more so as the UGC unfolds its selectivity strategy, the balance at present is tipped against university devolution.

One reason is that the universities so far seem to have approached this great question as if it were an administrative decision and had few implications for their inner academic life. Maybe this rather depressing inwardness of the Scottish universities, in which they are so typical of all universities in Britain, can be excused partly because the STEAC itself approached the question of university devolution from a similar perspective, the integrated planning of Scottish higher education.

As a result too much attention has been concentrated on the three safeguards which the STEAC insisted had to be fulfilled before any transfer of responsibility from London to Edinburgh could be contemplated. These were guarantees that the Scottish universities would continue to be covered by a United Kingdom-wide system of peer review, that they would continue to have uninhibited access to the research councils, and that the full value of their present grant would be transferred from the Department of Education and Science to the SED.

In fact all three can be provided as readily as any guarantee can be made under present troubled conditions. On the first there can be little doubt that our assumptions about and arrangements for peer review are already under critical review. The first rumour from the Crounham committee, which is inquiring into the UGC, suggests that its members have adopted a sceptical attitude to the UGC's elaborate system of subject subcommittees, preferring the view that they represent entrenched disciplinary fiefdoms rather than machinery for rigorous scrutiny of standards. Although Crounham is still taking evidence, it would be no surprise to see emerge in its final report a recommendation for a less donnish UGC in which the subcommittees were supplanted by a strengthened secretariat. This happens there would be little difficulty plugging the Scottish universities into such a system of peer review, in which any Scottish Higher Education Council almost certainly would be called on to play an important part. The second safeguard seems beside

the point. Research councils give grants to individuals, research teams, or at a pinch departments. They have almost no interest in the source of an institution's funding provided it is adequate. There are no serious reasons why Scottish universities should appear less attractive to the research councils because they are funded and planned by the SED rather than the DES.

The third safeguard can easily be provided in a narrow formal sense. There would be no difficulty in the Government guaranteeing that the SED would be given the full amount the Scottish universities at present receive from the DES. But the continuing effectiveness of this safeguard cannot be guaranteed so easily. Of course the universities would have to compete with central institutions hungry for a more elaborate research role. But so would the central institutions have to compete. Last year the SED managed to provide £14 million for the switch to science and technology, which compared very favourably with the £43 million scraped together by the DES. All that went to central institutions, although it is a fair assumption that if the SED had been responsible for the universities institutions like Strathclyde would have been prominent beneficiaries. The Scottish universities also need to remind themselves that even under the UGC status quo they have to compete with the rest of the universities. And they really confident that the present selectivity exercise will not suck more and more resources into the Oxbridge-London golden triangle?

Like the rest of higher education, north and south of the Border and on both sides of the binary line, the Scottish universities will have to rely on their reputations, their virtues and their wits. No long-term guarantees are possible. But the Scottish universities within Scotland are much firmer public support than British universities enjoy in Great Britain. It is public support on which the generous supply of resources ultimately depends, not more or less dignified constitutional and administrative arrangements for its distribution.

Maybe the more fastidious critics of the STEAC plan in Scottish universities should ask why their institutions enjoy this higher public reputation. A plausible answer is that the Scottish universities seem closer to the people of Scotland, to their individual, social and economic aspirations, and that they play a more central role in the formation of Scotland's national culture. Myths and stereotypes, treacherous guides of course, but maybe the Democratic Intellect will suggest appear more attractive than *Brigid and Revisited*. For in the end the devotion of the Scottish universities is not a trivial administrative question but one that engages fundamental issues of cultural and national identity.

A NAB-DES compromise?

Suddenly and quite unexpectedly, the National Advisory Body's planning exercise takes on an entirely new complexion. Sir Keith Joseph may have been careful not to promise an extra £23 million 1987/88, but in the real world he now has to come up with the money. Even such conditional advice is not given publicly without Treasury agreement.

Even the present situation is not that good news, especially for those in the arts and humanities. The NAB's determination to stand firm on holding the current unit of resource, albeit after temporary slippage next year, will intakes for art, the performing arts and the subjects grouped together as social issue, this still means maximum cuts for social work at a time when there is pressure on all sides for training in the subject to be increased.

Another set of subjects, comprising environmental sciences, languages and professional and vocational studies, will lose some 11 per cent of first-year places. In both groups, course closures

will be inevitable and in the humanities, where the are felt heavily enough in the last NAB planning exercise, whole departments are bound to be lost.

The pity is, as the chairmen of the planning bodies will make clear in their letter to Sir Keith, that the subjects to be cut most heavily are among those where there is demonstrable student demand. While the polytechnics struggle to fill places in engineering, students continue to vote with their feet and opt for courses in the humanities and social sciences. And, since most of the first-year students of 1987/88 are about to take O levels, there is little chance of a dramatic turnaround in the timescale of the planning exercise.

It is here that the new battle will be fought over the coming weeks and months. The NAB, having tasted success in forcing a concession from Sir Keith can be expected to hold the line on funding levels in the hope of extracting still more money; the DES will press for as many students as

possible to be accommodated within the expected £23 million. There is room for flexibility on both sides. There is room, particularly on part-time courses, for more students to be taken without materially affecting standards. Many colleges and polytechnics are likely to exceed their targets and banks the fee income in any case, if the NAB tries to restrict recruitment in areas of high demand.

Equally, it is to be hoped that ministers put their money where their oft-repeated statements of administrative policies have been. An extra £23 million is welcome, of course, but it is low in polytechnics and colleges if DES demands on student numbers are satisfied. If both sides are willing to the outcome for the public sector, then seemed likely at the turn of the year. If not, some departments or even whole institutions could still find their futures blighted by appearing on hit lists which may be modified in the end.



Ah Professor Morris, Go you. Do come in. Thank you, Professor. Actually, it's Morrison

Really? I do apologize. I may I start by thanking you for coming over to see me. I thought it probably ending your back trouble.

Ah yes. A long walk. You're less on the other side of the aren't you? True.

Quite so.

And we also fully recognize that there are discrepancies at the moment the staff-student ratios of different departments. Ours is three times as low as yours, I believe.

Whatever the exact figures may be, we therefore accept that no transfer of resources between departments is only a matter of time. Justice, but not of course justice which might area in itself, suspicion of a - and I believe has to be used - a merger. It couldn't be further from our wish.

Excellent. So I'm delighted to tell you that after a careful consideration of the intellectual and financial aspects of the merger, it was decided at yesterday's departmental meeting that we would, next autumn, be prepared to open the doors of our first year lecture hall to all your students.

And in addition, we would be prepared to consider the secondment of Mr Ted O'Brien, your department, Mr O'Brien may know, does not agree carrying out academic research on ideological grounds, so I am direct you towards any of his or articles. But he has an excellent reputation as someone who has put across narrow and old ideas in a stimulating fashion. That's most kind.

And finally, although I'm sure we have so far proved impossible to obtain the views of the personnel, we would also be prepared to allow one of our most senior lecturers, Doctor Piercemuller, to move across on a temporary basis one year. This would, however, be effective from January 1988. Doctor Piercemuller's forthcoming sabbatical. Of course.

So, how do you feel? Well, this is certainly a most and thoughtful offer, Professor, and one which I must say we are very much obliged to you for. I am sure that on the whole, that occasion we did feel, by a substantial majority, that the imbalances in resources between the respective departments might be remedied by a rather straightforward solution.

Fire away Professor Morris, Go you. Do come in. Thank you, Professor. Actually, it's Morrison

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Buildings crumble, libraries empty in resources crisis

£400 million repair bill sent to the Treasury

by Ngao Crequer

About £400 million must be found over the next five years to repair and maintain university buildings, the University Grants Committee is to tell the Treasury. Sir Peter Swinnerton-Dyer, UGC chairman, said this week: "We emerge with figures so large they are unbelievable. Every year it gets deferred the problem gets worse. It is a major headache."

He quoted the example of Sussex, an average-sized university, which needed £9 million for repair work. "Multiply that by 40 and that is the size of the problem." For the first time the UGC has called in management consultants, Deloitte, to examine individual university financial projections. The aim is to show the UGC how to use them to convince the Treasury, at the public expenditure review, which has just begun, that universities really are in deep financial trouble.

The other main points the UGC will make in the review are on pay, rates, university equipment and staffing. On pay Sir Peter said: "We cannot continue to give smaller increases than the civil service or public sector higher education."

On rates, he fears that some universities may face increases of between 25-30 per cent.

There is a feeling at the UGC that Sir Keith Joseph, Secretary of State for Education and Science is more sympathetic to the universities than he has been in the past.

The committee is also hopeful that a new redundancy compensation scheme for academics can be squeezed out of the DES and Treasury. "The door will open a bit if we can produce a scheme that looks genuinely managerial," said Sir Peter.

Under the last scheme universities had little flexibility to refuse volunteers and some imbalance in subjects was created. The UGC is currently in the middle of its resource allocation exercise which will produce a more selective distribution of recurrent grant.

The subject subcommittees have given each university department a research rating and territorial committees will now look at the picture this creates for each university as a whole. The grant letters will go out in May.

Book buying falls by a third

Spending on books for university and polytechnic libraries has fallen by a third, according to the National Book League. In the polytechnics it fell by 32.8 per cent in a single year, 1983/84. In universities it fell by 33.7 per cent between 1978 and 1984, with a 9 per cent fall during 1983/84.

The report says unless there are major changes in university priorities, giving much higher place to library purchasing and staff, adequate university library services and their role as centres of excellence cannot be maintained.

Since book prices have increased while spending has fallen, the numbers of books bought in polytechnics have probably fallen more than a third, the report says, adding "polytechnic libraries are reaching a dangerously low level".

Spending on periodicals has fallen less dramatically, although many librarians now insist that new periodicals are only bought if existing subscriptions for the same department are cancelled, the report says. Total periodical spending in universities fell by 1.4 per cent in 1983/84 and by 4.7 per cent between 1978 and 1984.

Periodicals now take up over half universities' library spending, compared with less than half in 1978. In polytechnics periodical spending rose 3.9 per cent in 1983/84. The higher proportion of funds devoted to periodicals suggests that research was being favoured in library purchasing, the report says. But it argues that the books now being bought are increasingly only those needed for teaching.

Library provision in colleges is less easy to assess since there are no central figures, the report says. But a questionnaire suggests that book spending per student in local authority colleges is at anything between £5.36 and £34.78, on average only half of what local education authority guidelines recommend.

Students' spending on books has also fallen, putting more pressure on library provision. The national element in the student grant for books and equipment was £173 or 15 per cent in 1982/83, but students actually spent only 5 per cent of the grant on books that year, a figure likely to have fallen further with reduction in the real level of grant.

Book prices at the same time are rising, according to the latest report on the average prices of British academic books, compiled by the Centre for Library and Information Management, Loughborough University. In 1984/85 academic book prices rose on average by 4.9 per cent, to £18.18, the report shows.

The increase varied widely between subjects, partly due to individual fluctuations in the numbers and prices of books published in those years.

The National Book League report argues that all these reductions are in the face of increased pressure on libraries from trends in higher education. Both on academic grounds and because of pressure on staff, students are being required to do more independent study and learning.

"Library, Book and Periodical Spending in Universities, Polytechnics and Colleges, 1981-84" available from the National Book League, 45 East Hill, London, SW18. "CLIM Report No. 30: Average Prices of British Academic Books", £7.50 from Centre for Library and Information Management, Loughborough University.



Going bananas: Students at Balliol College, Oxford raised about £800 for charity by turning the college into a "banana republic" for the day. Undergraduate Matt Wilson helped create a suitable atmosphere by creating a banana storm from one of the college windows.

Euro-youth network planned

by Patricia Santinelli

Major European cities will form a network on the education, training and unemployment of young people. It proposals put forward at an international conference convened by the Inner London Education Authority this week are implemented.

The network was proposed by Mrs Frances Morrell, leader of the ILEA, as part of a six-part charter designed to ensure that young people have a right to education and training to provide them with skills for work and leisure. Mrs Morrell told the conference

which brought together leading European educationalists, industrialists, politicians, trade unionists and young people that through cooperation, cities could pressurise their individual governments to change and improve opportunities for youth.

Lord Young, Secretary of State for Employment said he supported the creation of a new powerful central body which would approve vocational qualifications and clear the "present jungle".

Speaking in advance of a report by continued on page 3

Industry backs switch with £25 million bonus

by Karen Gold

Industry has backed higher education with an extra £25 million in a year, proving the success of the Government's £43 million 'switch' to engineering and technology. The prime minister and 30 captains of industry will be told this at 10 Downing Street on Monday.

The success of the programme should make it a model for the future,

with specific initiatives receiving earmarked money, the meeting will be told by both the Department of Education and Science and the Department of Trade and Industry. Management education is one proposal that may be discussed.

The meeting is the latest in a series at Downing Street to attempt to increase links between higher education and industry, and the first to which universities and public sector representatives have been invited. At the first, when industry's leaders were asked for their ideas on the distribution of the £43 million for information technology and areas of engineering, only the universities were to receive money and there was talk of industry matching the Government's funding.

But although the total raised in cash and equipment from the private sector is only just over half the public finding, the Government is impressed by the range of the support from medium sized as well as large firms and for the other contributions now being offered such as staff for part-time teaching and student placements.

The inclusion of the polytechnics, with £6 million from the second phase of the switch, will be pronounced a particular success. The DES calculated that the polytechnics have raised £7 million from industry in a considerably shorter time than the universities, which doubles their allocation from public funds. Of that a very large proportion up to £3 million - has gone to the Polytechnic of Central London.

The different qualities of university and public sector graduates will be on the agenda at the meeting. Discussion will centre on "the progress achieved in the generation of additional industrial support for institutions included in the programme".

has simply created more expensive student places in the universities while leaving cheaper public sector places empty, are unlikely to be widely aired.

Engineering decline worries planners

by John O'Leary

The number of students qualified for courses in engineering and technology is declining year by year, the chairmen of the three higher education planning bodies in England and Wales warned this week.

In their unprecedented joint letter to Sir Keith Joseph, Secretary of State for Education and Science, the chairmen say that they cannot satisfy the needs of industry in the new technologies until there has been a fundamental change of motivation in the schools. "We shall be providing somewhat

more places in engineering and technology than we expect there to be adequate qualified applicants for; this represents both an insurance against inaccuracies in our forecast of demand and some incentive to institutions to make a special effort to fill their places," the letter says.

In other subjects, however, the chairmen warn that qualified applicants will be turned away in their thousands next year. The chairmen of the University Grants Committee, the National Advisory Body and the Wales Advisory Body put the total number of displaced students at



Crisis in South Africa, 14-15

DON'S DIARY

MONDAY

A three-hour stretch of classroom presence for a group of trainees who had mostly opted out by the age of 13 is not intellectually demanding. It does, however, demand some sort of non-stop chatter to keep us tutors awake while attempting to instil some theoretical background to painting and decorating laced with core skills (to borrow MSC jargon), to the trainees.

By about 9.35am the class, scheduled for 9.00am, has almost become a physical reality. My colleague (with a PhD in English literature) and I, present a lively programme of comprehension, dictionary skills, experiments, discussion and numeracy based on the litre can of paint from the local superstore; oh yes, the word search and colouring also are popular.

Today's session follows the normal pattern of finding and organizing folders, pens, punches and handouts, discussion of the weekend's activities, (not many on £27.30 weekly), and the correct size of buttons, watchstraps and other items of interest appropriate to the East End of London. Some young people complete all the work and have contributed something relevant to the session. Some seem to know more about the protective qualities of paint, while others have left only cigarette ash and spent matches as a reminder of their presence.

After lunch a meeting is called for all staff to discuss the effects of the new MSC proposals; more acronyms to learn: WETE - still can't remember what that means. Inevitably new proposals will mean re-organization and change. When will it be realized that to attract and maintain staff with enthusiasm and qualifications more security than a yearly contract is needed?

Many staff will feel edgy for some time after this with subsequent effects on the training of the youngsters. The two-year YTS has advantages - it will give some young people, who desperately need it, a secure and stable, (relatively) environment to develop in.

TUESDAY

Exam maths starts by 9.05am. Young people in the company are now effectively stressed for their numeracy and literacy input although groups are fairly flexible in this go approach and standard and this goes against all our educational ideals. But it does seem to make for a more amenable atmosphere. This group is working towards a public numeracy examination in 20 weeks' time and I attempt to cover decimals in four one-week sessions.

While the college philosophy is not entirely founded on examinations, nevertheless offering public examinations in numeracy and communications may give many of our trainees a slight edge over other applicants for jobs. It is interesting to note that over half the students sat and passed their first examination of any kind in the summer. Other trainees are now thinking positively that maybe it would help if they could read and write and are asking for help.

Am I a don? Should I be writing this journal or would this be more appropriate in *Probation Officer Weekly* or *Lookers Monthly* as I sometimes feel? Well, as I was taught at university "define your terms" and OED defines "don" as "a tutor, a leader or a first class man". My title is in fact "tutor" and certainly we all attempt to lead our trainees into worthwhile and long-term employment. For the rest, are there any first-class men among you don?

The major excitement today was the turning on of the electricity. The education floor is on top floor of a Hamlets, and has been completely rebuilt by trainees.

WEDNESDAY

I am responsible for all mathematics teaching on this scheme so today I have virtually seven hours contact.

My act today should consist of revision maths - how to count - intermediate mathematics - fractions - and exam mathematics - decimals (see Tuesday), to various groups of trainees from offices, computing, catering, workshops and building and each lesson, sorry tutorial, will attempt to draw on relevant experiences for each group. Hence my slightly idiosyncratic background, (Black steelworks and conversion of my own house), is useful.

A short break for lunch enables me to discuss college business with the senior tutor. A list of outstanding equipment has been asked for and I add to it a toilet roll holder and video equipment, oh yes, and restoration of the electricity. The afternoon is much like the morning and I leave about 5pm with work to take to another part of the scheme in Docklands the next day.

THURSDAY

Problems with the motor so I take the North London Line out to Woolwich and alight feeling it ought to be holiday time as I watch the ships on the Thames, and smell the river. Instead I turn into one of the industrial units supported by the LDDC where 35 trainees are learning workshop and office skills. A major problem on this scheme is the number of trainees who are still "playing schools". After continual and repeated aggravation and horseplay one culprit is sent out to see the manager: in the end this is not school and the solution will not be the same. Like work, if the rules are flouted too often there is the sack.

FRIDAY

Back at headquarters we work a shorter day today to compensate for the short lunch and long day the rest of the week. By its nature this is a rolling programme and this week half a dozen new trainees have started.

One of our tasks is to allocate them to appropriate groups for off-the-job training. I am now surprised by the number of young people who have sat public examinations but never bothered to collect their results. We suggest telephoning the school; this is called life and social skills. Other new trainees have problems with basic skills and some have non-British qualifications which potential employers treat with scepticism although the young people are often more than competent in numeracy and communication.

The computer is informed of each trainee's programme and a pink form completed for the company. The electrician is reminded there is still no electricity: it is coming, we are promised. Meanwhile the company and the MSC require assessment on each trainee every month so a start is made on grading each of the one hundred trainees on a yellow form. A trainee brings up some typing for checking and distribution. I explain about apostrophes, again, and setting out book titles.

I leave some work for photocopying with I hope, precise instructions about collating and stapling - will they remember from last time exactly what is meant? All office work is carried out by trainees under supervision as this is a working company, manufacturing garden furniture, computer cupboards and other items. Trainees leave about midday, having been paid more than unemployment benefit but less than a student grant.

A staff meeting has been called to discuss holidays. As the college works with the company we do not have academic holidays generally - this year the proposal is for 28 days - some of which cover annual closures and public holidays. News about reorganization is also discussed and its effects on staff vacancies and redundancies. A possible pay rise is also mentioned.

I arrive home in time to help with the library at my children's primary school. Reading to five-year-olds really doesn't demand different skills from talking to 18-year-olds sometimes. My 10-year-old comes out of school and asks for help with decimals. I've been here before.

Caryle Webb-Ingau

The author is a tutor on a Youth Training Scheme course in East London.

Letters to the editor
AUT's mathematical error

Diana Warwick: speaking up for her members

Sir, - One of Ms Warwick's duties, as general secretary of the Association of University Teachers, is to persuade the Government that universities are underfunded. Another, apparently is to persuade the universities that they are not badly off and can therefore afford the pay increases which she would like to obtain for her members. In this second role, which is exemplified by her column Union View in your issue of February 14, selective gullibility is an advantage.

The cash figures for universities in the Government's recent public expenditure White Paper show increases of 2.5 per cent per year. Those figures include provision for the Open University, the Computer Board and the Engineering and Technology programme; if account is taken of those, the rate of increase of money to support existing activities in University Grants Committee-funded universities is a little over 2 per cent. The Government's assumptions about inflation are year-on-year increases of 4.5 per cent, 3.5 per cent and 3 per cent in the next three years. Current inflation is about 5.5 per cent.

Most of the non-pay costs of universities go up faster than inflation. Rates for example, which constitute some 7 per cent of the UGC grant, are expected to rise at some universities by

- but I would be surprised if the savings are so low.

Oxford University, starting with rather more practice than the rest, has said about 1986/87 universities seem likely to reduce of 4 to 5 per cent - not 2 per cent as in hypothesis. This is the first three years in which the Treasury forecasts an average annual cut.

I would not object to Ms Warwick's tendentious views were it not for the conclusions she draws from it. She implies UGC has adopted its plan of annual reserves totalling £100 million. In fact, as she will, we distribute each year's savings every penny that we need the Treasury. If we held money as reserves, the Treasury would claim it at the end of the year. Ms Warwick, in her comments, believe that we would save money go back to the Treasury rather than go to universities.

Yours sincerely,
PETER SWINERTON
Chairman, University Grants Committee

History degrees

Sir, - A number of misunderstandings underlie the letter of Drs Channon and Hanham (February 7) about the defence of history and about history degree courses in polytechnics.

● The House of Lords meeting was not confined to consideration of the state of history "in universities". It ranged over all educational sectors. Discussion did not "focus" on elitist history; still less did it come to conclusions hostile to economic, women's, or third world history; nor was the sense of the meeting hostile to social science in relation to history. There were, in fact, some distinguished economic historians and social scientists present.

● It is not true that the polytechnics are almost forgotten in the promotion of history. A Joint National Association of Teachers in Further and Higher Education/Historical Association conference will be held on June 14 at the Polytechnic of Central London.

● Drs Channon and Hanham rightly draw attention to the innovative interdisciplinary degree courses involving history on offer at polytechnics. These were specifically commended to the Secretary of State in the Historical Association's recent response to the Green Paper on higher education.

Yours etc,
DONALD READ,
President,
The Historical Association.

Lowest pay

Sir, - I noted with interest the article in *The Times*, January 24 which referred to a survey conducted by a member of the Finnish professors union indicating that the salaries of British university staff were "virtually" the lowest in any of the 10 countries which he surveyed.

Until the entry of Spain and Portugal into the European Community British university salaries at all the levels surveyed by Professor Cronström were lower than those in any other European Community country. Conversely the statutory duties laid on a British university teacher, to say nothing of the general level of expectations by the university in which he works, were higher, in some cases much higher, than in any other European Community country.

Yours sincerely,
ALAN S. MILWARD,
European University Institute,
Department of History and Civilization,
Florence.

Letters for publication should arrive by Tuesday morning. They should be as short as possible and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

School work

Sir, - For over a year now the debate over the reorganization of initial teacher education, initiated in Circular 3/84, has been in progress. In January this year the newly formed Council for the Accreditation of Teacher Education (CATE) published Catenote 4 which relates to the links between initial teacher training institutions and schools.

We, the undersigned methods lecturers in the University of Cambridge department of education, wish to comment as follows, particularly on the requirement for "recent and relevant experience of schools" for those lecturers engaged in "pedagogy".

1. While we fully agree with the maintenance of the closest links between training establishments and schools, we feel that the proposals must be thoroughly examined by all parties affected, including teachers and the local education authorities, before being implemented. As a matter of fact the Cambridge department has been practising most of the proposals of Catenote 4 for many years.

However, the requirement to formalize such arrangements comes at a most inappropriate time, when both schools and training institutions have been starved of the necessary funds.

2. There can be no question of simplistic arrangements where either lecturers act as regular classroom teachers or teachers stand in for lecturers, since the roles of each, while complementary, are totally different. Teachers practise their classroom expertise in a single institution whereas lecturers have a wider perspective affording comparison across the educational field. Lecturers' time in schools should be mainly spent trying out new teaching methods, new curricular approaches, and acting as consultants and innovators.

3. The teaching pattern in a number of university departments of education, as in Cambridge, already involves non-methods lecturers in pedagogy and, conversely, methods staff in cross-disciplinary areas of professional theory. It is, therefore, a pity that in

Catenote 4 the non-methods should not have been required to undertake teaching experience, solely on an already over-burdened methods staff.

4. We regret the fact that Catenote 4 has nothing to say about the contractual obligations of both university school staff to their own students. Who, for example, is to be responsible for the personal and professional development of the student teacher? his tutor is working in a school? further the question of additional measures, such as insurance, are legally necessary measures of the responsibility of the university staff involved.

5. Finally, there is the very real worded requirement for the teaching and evaluation of the best teaching experience. Is it a regrettable irony that the Government's goal of teacher evaluation, a controversial topic has been up and running for some time? We cannot see any group of clearly qualified to carry out this successful classroom teaching heads of departments, as research and curriculum consultants, (dead) as university lecturers. The factor, not previously mentioned, but not proposed, for evaluation wholly unacceptable even to the conditions of Circular 3/84. We cannot see any group of clearly qualified to carry out this successful classroom teaching heads of departments, as research and curriculum consultants, (dead) as university lecturers.

Yours etc,
ANTHONY ADAMS,
ALAN BISHOP,
MARTIN BOOTH,
PETER MITCHELL,
JOHN RAFFAN,
BRENT ROBINSON,
WITOLD TULASIEWICZ,
KEN WALTER,
REX WALFORD,
Department of Education,
University of Cambridge.

Student finance

Sir, - On behalf of the Standing Conference of College Principals I write to express our concern at the potential restriction of access to higher education which seems likely to result from a series of government proposals now in the pipeline. These proposals if implemented would seriously affect the financial status of students in higher education if:

- a) Student grants for 1986/87 are only increased by 2 per cent;
- b) Supplementary and unemployment benefits for students are withdrawn;
- c) Housing benefits for students are terminated;
- d) "Community charges" for all

over 18 years replace the rates system. Whatever the eventual implementation the main effect would be to reduce the income of those from families on low incomes. We find it most regrettable that the Government should have such divisive community charges in higher education. Involvement in higher education should not increasingly become a preserve of those with wealthy parents.

Yours faithfully,
JOHN L. TAYLOR,
Chairman,
Standing Conference of Principals,
Directors of Colleges and Universities,
Higher Education.

Guidelines stand by v-cs

by David Jobbins

Vice chancellors are refusing to tighten their new guidelines on free speech despite growing demands from Conservative MPs and increasing disquiet in ministerial circles.

The vice chancellors, who are to explain their position to Sir Keith Joseph, Secretary of State for Education and Science, believe that the power to ban meetings where a high risk of violence is anticipated is a sufficient safeguard. This reserve power is one of the new guidelines.

But many MPs believe that vice chancellors are opting out of their responsibilities and the Government is under pressure from a growing number of back-benchers to provide time for a private member's bill placing a legal duty on universities to safeguard free speech.

The drive follows what Sir Keith described as a "rash of infringements of freedom of speech and the violence and disruption associated with it".

The incidents began with an attack on the Conservative right-winger, Mr John Carlisle, at Bradford University last week. He was due to speak at a Conservative students' meeting, but was attacked by demonstrators who were later acknowledged not to be students.

At York University, the student union is being taken to court by the university authorities for reimposing a "no platform" policy and barring Mr Carlisle from a meeting for the second time in a year. At Oriel College, Oxford, this week he was prevented from addressing a Monday Club meeting. Yesterday he was due to speak at Leeds Polytechnic.

Mr Carlisle, an advocate of restoring sporting links with South Africa, has often been a target for student demonstrators and has become a frequent guest at FCS meetings.

His freedom to speak was defended in the Commons by Mrs Thatcher, and in a statement by Sir Keith, who complimented Manchester University on the tough action it had taken with students who were said to have attacked Home Office minister Mr David Waddington last November.

While Sir Keith is understood not to have specifically asked the vice chancellors to tighten up their guidelines, the made clear he expected universities to enforce them vigorously.

The working group on the Review of Vocational Qualifications due in April he said he wanted vocational and technical qualifications to become as highly regarded as academic awards.

A new system of vocational qualifications should deliver five things: it must be simple, relevant, credible, accessible and cost effective.

Past and present educational policy in the West Germany was attacked by Herr Hans Jorg Horger, executive director of Siemens (AG) personnel corporate division. He said that current problems were the results of misguided educational policy which had for too long favoured higher education at the expense of vocational training.

Vice chancellors and union leaders this week joined forces to press the Government for more resources to stem the steady erosion of university salaries.

University employers and the Association of University Teachers used a meeting of Committee B, the second stage of the salary negotiating machinery, to enlarge yesterday on their evidence that salary levels were causing problems in recruiting and retaining staff, and that morale was being severely damaged.

Earlier this week vice chancellors took advantage of one of their regular meetings with Sir Keith Joseph, Secretary of State for Education and Science, to argue the case for more resources.



A traditional Chinese lion comes alive to welcome in the Year of the Tiger during new year celebrations staged by the 250-strong Chinese Society at Essex University. Students cooked a nine-course meal for the celebrations. The society is the largest national group on campus, including members from Hong Kong, Singapore, Malaysia and Taiwan.

CVCP in HMI report move

by Patricia Santinelli

Universities are being told to circulate freely or even publish Her Majesty's Inspectorate reports on their education departments.

The Committee of Vice Chancellors and Principals is to write to individual universities to say it believes that wider circulation or publication of reports would be of benefit.

The Department of Education and Science is behind the move. It argues that there is no reason why reports of university inspections should not be as freely available as those on public sector teacher training.

Until now HMI has visited university departments of education purely at their invitation and completed reports have been confidential to the department in question. The inspectorate

does have the right to inspect and publish reports on extramural departments. According to the CVCP, the last such report was on Leicester University two years ago.

Publication of HMI reports was ordered in January 1983 by the Secretary of State for Education. The reports cover the structure and content of courses, accommodation and resources, staffing, students, relationship with schools and professional issues.

The vice chancellors think that wider circulation of the reports would be a good public relations exercise, as most to the right or nine final reports completed on university departments of education are favourable. It would also show that universities have nothing to hide, they feel.

So far HMI has visited some 60 institutions as part of its major inquiry into teacher training. Some 30 reports on colleges and polytechnics have been published, a number of which have been fairly critical. All reports are being taken into account by the Council for the Accreditation of Teacher Education.

Sir Peter attacked on social science

Oxford University's independent academic journal, the *Oxford Magazine*, has published a scathing attack on the chairman of the University Grants Committee, Sir Peter Swinerton-Dyer, for his attitude towards social sciences.

The magazine's editor, Mr Terence Reed, a lecturer at St John's College, has criticized Sir Peter's speech to the Association of Learned Societies in the Social Sciences, in which he blamed the "inflated claims" of social scientists for the public scepticism about universities which led to the 1981 cuts.

"It is ironic that the social sciences should be attacked through an essay in off-the-cuff sociology which is as unconvincing as it is arrogant," says Mr Reed.

"It needs to be said - especially as the UGC is currently under examination - that it is not the proper role of its chairman, in all his brief authority, to go about attacking academic disciplines in which he can claim no real knowledge but which it is politically fashionable to attack."

Sir Peter's warning to the social scientists, that the Secretary of State for Education, Sir Keith Joseph, was not convinced that they had "changed their spots in any way", was the kind of language which might be expected in Jaruzelski's Poland, says the article. Sir Peter this week described the article as a "fine bit of knockabout polemic".

Twin attack on pay erosion

The twin moves followed the Government's acceptance of the 5.25 per cent award to university teachers and academic related staff made by the independent chairman of Committee A when the two sides failed to negotiate a settlement. Under the award all academics will receive 5.2 per cent while those earning below £8,920 will receive an extra £110.

An emergency council of the AUT discussed this week how to further its political campaign over the coming weeks. Plans for further strike action have been put on ice, but union leaders are considering how to step up the campaign of industrial action in the autumn, including a possible go-slow on admissions.

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I have not noticed many significant changes in my pattern of life since retiring from the directorship of the polytechnic and indeed seem to be, as many retired people tell me, busier than ever. But there is one unambiguous benefit which I now celebrate. I do not have to attend meetings. That must result in attitudinal changes, for meetings are not called to enable people to make decisions; they are called to enable them to avoid responsibility.

In the early days of the polytechnic it happened several times that a meeting would end with an experienced (and therefore cynical) academic suggesting that the matter might as well be left to the director since he would decide it anyway and get on with the job whatever the rest thought; and since I had probably put the matter in hand already I would express gratitude for the confidence so thoughtfully expressed. But as the years rolled on the number of meetings increased more quickly than inflation; and I began to wonder if I was losing my grip.

One day in the late 1970s I sat down to write a Don's Diary for this admirable journal but failed to send it in; I found it while clearing up my affairs, and here is the gist of it. It started with my looking at my diary and finding it a frightening document. It consisted of page after page of meetings. The entire academic world, I had written, is on its way to or from a meeting. It's an epidemic. In a few years everybody will be at meetings all the time. No one will teach or learn - or even do research.

We had over 200 meetings about the merging of the polytechnic with two colleges of education and I chaired a lot of them. By the end there was nothing anyone could say that I had not heard before. Millions of words, thousands of hours, hundreds of thousands of pounds in man-hours; it all had to be gone over again and again. I began to wonder if I was losing my hold on reality. It even affected my behaviour in the family. I began to hold meetings with the children, devoting Sunday luncheon to discussions about abstractions like happiness and justice, until they all went into rebellion and were thus for a short time a unified family.

I did record in my unfinished Don's Diary that what consumed all my time as director of the polytechnic was not administration, whatever that included. In so far as it meant reading and writing letters, the work could easily be done in an hour a day. The real administrative work was seeing people, talking, arguing, commenting, trying to discover what the staff were keen about. There were of course in those days innumerable people, both officials and private citizens, carrying out surveys in an attempt to accumulate masses of unusable information; and that could take several days if you failed to send it on to someone else ("Who can we send this lot to, Ann?"), dumping it in the bin from which she might rescue it if anyone rang).

If the paperwork piled up too much, you could take the breakfast train to London to attend another indecisive meeting. And that was useful because on the train, having an enormous breakfast, were half the town council, all the senior officials and a smattering of local businessmen. University professors took a later train with cheap day returns. The intellectual world was on the move.

Patrick Nuttgens



Hears and flowers as well as degree certificates for Brighton Polytechnic graduates Peter and Patricia Fletcher, who got married on St Valentine's Day before going to receive their degrees in electrical and electronic engineering and a send-off from fellow graduates at the Brighton Centre.

Let us expand, not reduce, says OU

by Maggie Richards

The activities of the Open University must be expanded - not reduced - during the next decade, to meet both the social and vocational education needs of the nation. That is the message proclaimed by the university in its response to the Government's green paper on the future of higher education.

As a national institution the OU regards itself as uniquely fitted to play a major role in the development of higher education in the 1990s. But the university's response stresses its enthusiasm for greater collaboration with other parts of the higher education system, and its willingness to share facilities and technological expertise with other institutions.

To underpin its arguments for expansion, the OU response points to 15 years of expertise in open learning; a massive one million increase in the 30 to 40 year age group over the next decade; and rapid technological change which will heighten demand for frequent retraining and updating for large numbers of people.

In presenting its financial case, the university calls on the Government to acknowledge there is a limit to financial cutbacks, beyond which the ability of higher education to respond to the country's needs will be placed in jeopardy.

In its own case, the OU says reductions in funding have reached a critical stage. If further cuts are imposed the university will be forced to abandon some of its existing commitments; there are areas such as languages and law which it has not been able to exploit and where there is continuing demand.

While supporting greater collaboration with other institutions of higher education, the OU maintains it should continue to be the main provider of first degrees by part-time study, whether by local or distance education.

In particular, it vigorously opposes and extension of the Open Tech into degree level work. This, the OU contends, would lead to unnecessary duplication and might result in neglect of sub-degree training.

by David Jobbins

Rapid progress must be made towards establishing a code of conduct for recruiting and receiving overseas students, Sir John Burgh, director-general of the British Council, urged this week.

He told a conference on responsible recruitment that a great deal more needed to be done to achieve not only the numbers and quality of overseas students sought but to ensure that

The OU also emphasizes its well established role in updating and re-training. The university, says the response, is capable of responding rapidly and effectively to meet national needs for trained manpower.

It urges the Government to play a major role in this particular area: by clarifying the roles of various Government departments and agencies; and by assisting in the development of a coordinated plan for the provision of part-time higher education.

Calling for a reappraisal of the Government's self-financing policy for continuing education, the university says consideration should be given to the use of incentive schemes, including tax allowances for individuals. For under-graduate students the OU wants a more equitable national policy on part-time fees, and a system of means-tested mandatory grants.

Looking even further into the future, the OU suggests the development of satellite and cable telecommunication will bring about opportunities for cooperation in education and training throughout Europe. As a pioneer of distance, multi-media teaching the OU should be, says the response.

Supporting the university's main arguments, the Open University Students Association condemns the Green Paper for its lack of vision.

In its reply to the Green Paper, the recently formed Continuing Education Standing Committee welcomes Government recognition of the importance of continuing education. The committee, established jointly by the National Advisory Body and the University Grants Committee, urges acceptance of the fundamental principle that initial education alone cannot suffice for an individual's whole career.

Examining the vocational area, the committee calls for action on three fronts: staff development, broadening opportunities, and widening access. It also points to an anticipated surge in demand for highly skilled manpower in the next five years, at a time when numbers of initial entrants to higher education will be declining.

Foreign students need a welcoming code of conduct

by David Jobbins

Rapid progress must be made towards establishing a code of conduct for recruiting and receiving overseas students, Sir John Burgh, director-general of the British Council, urged this week.

He told a conference on responsible recruitment that a great deal more needed to be done to achieve not only the numbers and quality of overseas students sought but to ensure that

"after sales service" was "delivered in the right way, at the right level, at the right time, and at the right price."

British institutions were now far more aware of the attractions of courses offered by other Western nations and had rethought their approach to provision of information, admissions procedures, and marketing methods overseas, he said.

"But what has been overlooked by some is the mix of factors which the American management guru Herzberg

They've lost that loving feeling



by Peter Aspdon

Academics, despite their cold and hard-hearted image, need to be loved and constantly reassured that their work is appreciated, according to an expert on industrial management.

Ms Julia Cleverdon, director of Education for Industrial Society, said academics working in universities were very poor at giving praise to their colleagues.

"The argument runs that prima donna academics do not need loving, and that giving praise openly is a load of rubbish and frightfully un-British," she told a conference on university management at Sheffield University.

"In fact, like accountants, they probably need more encouragement, more care and more attention than people in a lot of other professions. It is important for them to talk about what they are doing and what people think of their work. All of us need things we are bad at."

Ms Cleverdon said the way the Secretary of State for Education, Sir Keith Joseph, had introduced the theme of staff appraisal in education was "appalling".

would label hygiene factors. These are the factors which do not motivate but which if mishandled could demotivate the customer."

One example he outlined to the conference, organized by the Association of University Teachers and the UK Council for Overseas Student Arrivals.

The existence of an orientation course at an institution was by itself not

Flood damage claim fails

A senior lecturer in Essex University's English literature has lost his claim for damages for a book, *Sexual Life in the 18th Century*, were obliterated by flood.

Dr John Price was seeking damages against a building owner and the owner of a flat above water damaged notes he lost ink over a number of years.

Larkin memoir

The vice chancellor of Hull, Prof William Taylor, has a team to look into suggestions for a permanent memorial to Philip Larkin, the poet and university's former VC. Among the proposals are a permanent display of his work; a statue; and a building associated with Hull and the east coast area of England. The move comes at the time as another university wants to close one section of its library, reducing shelving space.

'Cheaper' jibe

The Science and Engineering Research Council should review its search in universities and polytechnics because it currently discriminates against polytechnics, says the Association of Polytechnic Teachers. SETC too university officials and false assumptions that university search is "cheaper" because of university Grants Committee dual funding not possessed by the polytechnic APT says.

Library award

The British Library has awarded a £20,000 grant to two years for preservation work on a unique manuscript collection of 18th century work by Robert Burns and correspondence with Sir Walter Scott and Thomas Carlyle.

The Laing collection, bequeathed to the university in 1878 by David Laing, includes over 3,300 letters, 10 medieval manuscripts and 7,500 letters as well as thousands of miscellaneous documents. The grant, backed by the university's own library council trust fund, will enable the library to appoint a conservator for years, and set up a repair unit.

Open all hours

Open University students who concentrate on history will have a chance of a year of full-time undergraduate study under a new agreement between the OU and Ulster University.

Ten places will be reserved a year for specially selected OU students who have a strong history background. The year of full-time study will then be counted as the equivalent of two OU third level credits.

Design business

Two design awards linking education and industry have been launched. "Design Into Business", run by the Design Council and the Design Council, offers up to three years' education for teaching teachers to meet the design needs of industry. The £2,500 Arthur Young Award, run by Westminster Bank business school, offers up to three years' education for teaching teachers to meet the design needs of industry.

likely to be a decisive factor in choosing a would-be student. But the importance of such provisions would be the process of demotivation.

Other, perhaps more immediate examples of "hygiene factors" are inadequate accommodation, lack of isolation, financial difficulties, and homesickness.

A code of conduct governing recruitment policy was much needed had to be implemented by institutions

Free speech in many tongues

Right-wing Tory MPs rushing into battle behind their standard bearer on the campuses, Mr John Carlisle, are finding themselves in unlikely and not usually welcoming company. The right-wingers are adding their voices to calls for government time for a private member's bill to safeguard free speech in higher education.

But the bill's sponsor, Mr Fred Silverman, is a considerable political distance from his new allies, while many of his original supporters are among the wets who have been loudest in their condemnation of the Federation of Conservative Students libertarians.

Did the University of Kent know something about the Channel Tunnel before the rest of us? The university, said at picturesque Canterbury where the Channel Tunnel really was signed, has been commissioned to translate the city's tourist leaflets into Russian.

Post-doctorate experience

"Success" screamed the latest edition of Essex University's newspaper, a sure sign, in these troubled times, that it had won a juicy research grant or lucrative industrial contract. Not so - the paper was celebrating the election of its former graduate, Dr Oscar Arias, as president of Costa Rica. Dr Arias, the centre-left candidate of the ruling National Liberation Party, was evidently a student with foresight and ambition, having chosen to write his PhD thesis on "The study of formal leadership in Costa Rica".

No one is safe in the current Edinburgh University crackdown on staffing, not even the university principal Dr John Burnett who has just announced his intention to retire in 18 months. Shortly after the announcement, Edinburgh's secretary, Mr Alex Currie, was speculating that the present moratorium on filling vacant posts might extend even to the principalship. Overhearing, Dr Burnett retorted: "I suppose you will want me back on a part-time basis".

Discretion is the better part

Conservatives in the south-west are being less than robust in defending their government's Green Paper on higher education. Exeter University's students union tried to set up a debate on the future of higher education including cuts in spending and student support. Students' union president Chris Pilgrim and Exeter's ubiquitous professor of education Ted Wragg were to oppose the cuts, and the local Conservative party was invited to defend them. The invitation was unanimously declined.

Private inspection

A glimpse into the private lives of those very private people, Her Majesty's Inspectorate, will be given by the House of Commons Select Committee on Education, Science and Arts, senior chief HMI Eric Bolton and chief teacher training inspector Pauline Perry were heard exchanging notes on their relative performance according to *The Sunday Times* lifestyle questionnaire.

Both admitted losing 20 points apiece because they each had a television in the bedroom. Mrs Perry, on the other hand, at least gained marks for originality when she told Mr Bolton she watched breakfast television before 7am, while eating her porridge in bed. Teacher training colleges whose fate hangs in balance, not to mention Mrs Perry's hands, may care to bear that in mind.

Opinions differ on training criteria

by Patricia Santinelli

Teacher training courses judged good by Her Majesty's Inspectorate do not automatically get approval from the Government's accreditation body or vice versa, MPs were told this week.

The HMI admitted to the House of Commons Select Committee on Education that some courses which they had judged good did not precisely meet the criteria used by the Council for the Accreditation of Teacher Education.

Mrs Pauline Perry, chief inspector for teacher training, told MPs investigating primary training that this was

the case for example with school-based criteria. Many institutions had found it difficult to comply with the criteria, yet as far as the inspectorate was concerned their courses were good.

She added that, in the same way, courses approved by CATE as far as the criteria was concerned might not be judged by the inspectorate as being of sufficiently high quality.

Both Mrs Perry and Mr Eric Bolton, senior chief inspector, stressed that the inspectorate did not have a blueprint for teacher training, and that it was not its role to adhere to CATE criteria, but this was an element in the basis of their

judgements. Both inspectors admitted in response to questions and a quoted letter from the Essex Institute of Higher Education that CATE criteria had caused anxiety among teacher trainers and that this had been revealed in reports.

Recent and relevant school experience was one of the criteria in question, but splendid and successful efforts were being made to meet this and institutions were moving fast.

On another, the insistence on two years of subject studies for intending primary teachers, Mrs Perry said that

this had often been misinterpreted. She stressed that criteria had been devised in response to the need of primary children and schools. With the tremendous changes in that area, it was necessary to equip teachers to teach across the whole of the curriculum as well as in depth in a particular area.

Mrs Perry confirmed that the HMI intended to continue its visits to universities beyond the current investigation of teacher training. This would be necessary as long as CATE existed and approved courses, but would always be on an invitation basis.

S. African ban stands despite resignations

by David Jobbins

A ban on South African participation in this year's World Archaeological Congress is to remain despite withdrawal of recognition by its international sponsoring organization and the resignation of several prominent academics.

The congress, planned for September in Southampton, is to go ahead largely as planned following the creation of a new controlling body in London last week.

But the withdrawal of up to 300 American and West European academics in protest at the ban means that some of its specialist meetings have been cancelled and others introduced.

Organizers predict that most of the 3,000 academics from 102 countries who have already signalled their intention to attend will still do so. But it is clear that the events surrounding the ban on 26 participants from Southern Africa - two of them black and others said to be prominent campaigners against apartheid - has created a serious division not only at international level but within the British academic community.

Efforts to find a way of meeting an ultimatum from the International Union of Prehistoric and Protohistoric Sciences founded earlier this month and led to the resignation of Professor

Adult body takeover to go ahead

The Scottish Community Education Council has decided that it should take over the Scottish Adult Basic Education Unit, with the closure of two of its three offices.

But a decision to make two full-time fieldworkers redundant has been postponed until the SCEC's next meeting on March 21, to allow consultations with the unions involved.

The Government is to cease separate funding of the SCEC and the SABEU, which will share a common budget from April. Most of the SABEU's current £160,000 grant is spent on the salaries of its five professional fieldworkers and six back-up staff. All their contracts were due to end next month, but were extended until June to give the SCEC more time to consider the future of their work.

Ms Sue Argent, chairperson of the adult education branch of the Educational Institute of Scotland, claims there is a danger that "if the Scottish Office succeeds in banishing adult basic education from the public consciousness in this way, regional education authorities will also subsume it into community education, and the focus of the work will be lost."

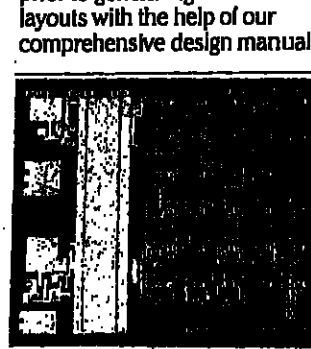
But Mrs Dorothy Dalton, director of the SCEC, said the decision to merge the two bodies had been taken in a context of congratulation for the SABEU's work over the past 10 years. "There was a very strong feeling that adult education work should not stop or be pruned in any way, and that it should be given a high profile and adequate share of resources," she said. Mr Jack Dale, further and higher education secretary of the EIS, hoped the merger would take place in "a constructive and expansionist fashion," although he recognized the financial constraints imposed on the SCEC by the Scottish Office.



Leicester Polytechnic library has been awarded £41,000 to investigate the application of office automation in libraries. Trying out part of the microcomputer network are library staff Michael Pashley (left) and Roy Adams.

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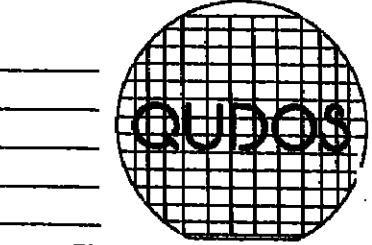
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TE QUICK DESIGN ON SILICON



Work by Liverpool Polytechnic head of sculpture Robert Scriven has been picked for the Yorkshire sculpture park's winter selection. The park, at Bretton Hall College near Wakefield, will have seven life-size sculptures in wood and metal on display near the lake until April, including this girl on a bicycle completed in 1983.

Green Paper attacked for vocational over-emphasis

The Educational Institute of Scotland has attacked the Government's Green Paper for over-emphasizing the vocational element of education.

This is particularly harmful in higher education, where students should not simply be preparing for a career, but expanding their knowledge and capabilities to help them later in life, says the EIS response.

The Scottish pattern of broadly based degree courses should be copied elsewhere in the UK, the institute says, and it dismisses the Green Paper's "tentatively floated proposition" that an honours course could be studied in two years.

It condemns the section on student union democracy and freedom of speech on campuses as "the most blatantly political part of the paper" and suggests it may have been written

"in the light of uncomfortable experiences by Government ministers on visits to universities".

While agreeing that student unions should be run democratically, and that freedom of speech within them should be upheld, the EIS says experience in Scotland indicates that achieving these standards can best be entrusted to the student body itself.

Mr Fred Forrester, EIS organizing secretary, called on the Government to reject the option of student loans which he said would accelerate the trend of youngsters going straight from school into employment well below their level of ability.

The days when graduates had a guarantee of entry to a well paid career were over, and the need to repay a grant after finding a job would reduce the attractiveness of higher education.

'Penny-pinchers' under fire

The principal of Heriot-Watt University has condemned the "penny-pinching and grudging attitude towards education" of the Government's Green Paper compared to attitudes in Scandinavia.

Dr Tom Johnston, in his annual report, says it is recognized in Norway and Sweden as a matter of the greatest national priority that the only sound long-term basis for a civilized society and vigorous economy is to be found in investment in education and training.

Heriot-Watt has signed an agreement with the Royal Norwegian Ministry of Cultural and Scientific Affairs ensuring a steady flow of well-qualified Norwegian candidates into undergraduate courses in engineering, computer science and business studies, and a range of postgraduate courses, Dr

Johnston reports. But the Green Paper revealed "a complete absence of concern for the Parable of the Talents - the need to invest wisely and generously in the nation's human resources". This prevailing climate of parsimony was not only deplorable but extremely alarming, the principal adds.

"No one in education is asking for a blank cheque; but it is our bounden duty to stress that our society is not at present making adequate provision for education and training."

But Dr Johnston adds that Heriot-Watt, as a technological university, expects to avoid most of the chill winds blowing through higher education, since the Government is prepared to give at least some priority to science, engineering and business studies.

Animal rights charter launched in Scotland

A students' charter against animal experimentation which has won support from thousands of students within the past month has been launched in Scotland this week.

The National Anti-Vivisection Society's "Violence-free Science" campaign has been ratified by student associations at Leeds and Sussex universities, and Plymouth Polytechnic, with student groups in many other institutions campaigning to adopt the charter, which protects the rights of students to refuse to work on animals.

Now, Mr John Robins, organizing secretary of the Scottish Anti-Vivisection Society, has said: "We hope student associations in Scotland will also adopt the charter, giving full

backing to students who object to taking part in unnecessary dissection and vivisection. Until now, students who had any element of compassion have had no backing from their peer group."

The campaign was not simply about animal rights, but about the right of people to choose whether or not to abuse animals, he said. "Students are forced to take part in dissections and vivisections which are not relevant to their future careers. There is no reason why they should be desensitized by having to view or take part in unnecessary cruelty to animals."

Mr Robins said some element of dissection might have to take place in a

veterinary course, but that animals should not be specifically killed. The campaign is being backed by the National Union of Students, who say tapes and models give an alternative to practical dissection. "We don't want students to face the terrible dilemma of choosing between their exam prospects and their conscience," said an NUS spokesman. Ms Lorraine Walker of the NAVS said the impetus for the campaign had come from the students themselves. "The response we've had indicates that this is a problem we had very much very concerned about this issue, but all they could do was grumble among

Leeds fine art intake halted

by Karen Gold

Leeds Polytechnic has been ordered by the Council for National Academic Awards not to recruit students to the autumn 1986 intake of its BA fine art degree.

The instruction came after a CNA visit to the polytechnic's fine art department, which has been the subject of controversy for over a year. The council has agreed to visit the department again in May to consider whether it may recruit for this year on the art and design clearing house.

The hiatus puts fine art at the polytechnic at a particular disadvantage in the National Advisory Body planning exercise for 1987/88, since it will be unable to predict its student numbers in a subject destined for

substantial national cuts.

The CNA is understood to have visited the department and criticized the fine art examination and course procedures, including student supervision and course documentation. The council has been involved in a dispute of fine art students who appealed against the polytechnic and a number of the students' results have been confirmed by the CNA which recommended the external examiners panel to consider them. But up to 18 students may now be involved in the grievance procedure against staff in the fine art department.

Some fine art staff, along with student supervision, the provision of course options and the polytechnic's central administration, were all criticized in a report by a special review

panel of the polytechnic. The report included allegations of staff of drunkenness and sexual harassment. The CNA is said to have put pressure on the polytechnic to reform fine art.

Mr Christopher Price, Leeds Polytechnic, said that over predicted intakes for 1986 that fine art staff were waiting for a resubmission to the CNA.

Numerous students had wanted to go to Leeds and prepared to wait until May, but also said he was hopeful there was a solution shortly to the dispute. The 1984 finals students who had not received their degrees.

Lecturer loses sex bias case

by David Jobbins

A South Wales college has been cleared of sex discrimination against a child psychologist who was passed over for promotion when a younger man was appointed to a job she had done temporarily for a year.

Dr Pamela Harris, a lecturer in the department of clinical health at the South Glamorgan Institute of Higher Education, stood in when the head of its psychology section left.

But when the college filled the post on a permanent basis it was not Dr Harris but a candidate from outside, Dr Christopher Barry, who was appointed.

Dr Harris, who is still at the college, made clear during an industrial tribunal hearing in Cardiff that she had no criticism of Dr Barry. But she claimed that the reason she failed to get the job was because of "attitudinal discrimination" defined by tribunal chairman Mr David Powell as expecting a "greater margin of superiority in a female applicant if she is to compete favourably against a man."

Asked why she felt she had been a victim of sex discrimination, Dr Harris told the tribunal she arrived at that conclusion by a process of elimination. The tribunal was told that all Dr Barry's experience was in university teaching and research, while Dr Harris's was more vocational and linked to the institute's work.

But the external assessor on the appointments panel, Professor Derek Blackman, of University College Cardiff, the only professional psychologist involved in the process, was impressed by Dr Barry's "cleverness" while Dr Harris did herself "less than justice" at interview.

Professor Blackman's evidence was crucial in steering the tribunal away from accepting Dr Harris's claim. Apart from the "comparatively minor" issue of administrative ability, the only points of distinction between the two were the character of their publications and the implications for their research, he said.

The college chose to appoint Dr Barry and the tribunal agreed: "We have no grounds for finding that the appointment of Dr Barry was in any way discriminatory."

Involvement urged in technical initiative

by Patricia Santinelli

A call for universities and polytechnics to recognize the achievements of Technical Vocation Education Initiative students as well as to participate in the projects was made this week by the Manpower Services Commission's chairman.

Speaking at Middlesex Polytechnic, Mr Bryan Nicholson, said that one of the top priorities of TVEI projects would be the development of an effective dialogue with higher education so that students' capabilities as well as their knowledge were recognized.

"I believe this is also a marvellous opportunity for those in higher education actively to involve themselves in shaping the projects," he said.

Mr Nicholson split out three fundamental concerns as far as the TVEI and higher education were concerned. The first was that admission tutors should accept A level passes in more applied areas such as technology and business studies, rather than just the traditional physics, chemistry, or

mainstream arts.

"Second, I would like universities and polytechnics to recognize and coping skills in TVEI students," said. "I believe that they will be better able to benefit from education as a result of the new styles in TVEI that are designed to develop self-reliance and personal effectiveness."

Third, universities and polytechnics should recognize new areas of study which might not necessarily be single subjects, for example, model approaches covering a range of subjects.

Discussing the future, Mr Nicholson said he would not be content with every secondary school had the chance to offer all pupils the benefits of the TVEI, which was originally launched in 1982 as 14 pilot projects at 14 to 18-year-olds.

The MSC expects that by the turn of the century 90 to 100 local authorities will have approximately 85 per cent of their schools involved in the projects, or one in 10 schools.

Software discount deal

Universities in the UK are assured of access to up-to-date computer software for electronic engineering students after a discount licensing deal with major suppliers.

Software for computer-aided design of microelectronic circuits worth £25 million at commercial rates will be available to all universities with undergraduate courses in relevant subjects through the £300,000 agreement with five companies.

The agreement will ensure graduates in electronic engineering have the skills needed to use the computer

systems now displacing design boards in design offices.

It is part of a larger allocation of £1 million by the University Grants Committee to boost computer-aided design in higher education. The rest of the money will be used to buy hardware and should provide computer facilities to use the new software.

More than 2,000 undergraduate students should have access to the new programs in the next academic year. Universities will still have to make arrangements for fabrication if students need to see their chip designs made up and working.

Amir's grant highlights Islamic funding push

An annual grant of £18,000 from the Amir of Qatar, Sheikh Khalifa bin Hamad al-Thani, has been awarded to St David's University College, Lampeter, to establish a new lectureship in Islamic studies.

The new post - the first of its kind to be set up in Wales - will be financed initially for five years, during which time the college hopes to develop its strength in Islamic and religious studies.

The initiative also typifies the new, more aggressive approach of universities towards raising money for new courses and posts related to Arab and Islamic studies. Professor David Davies, head of theology at Lampeter, said the college principal had made a "direct request" to the Amir for the funding of the lectureship.

Last summer, a centre for Islamic studies was established at Oxford University, funded by "generous contributions" from individuals and organizations. Initial funding came from Sheikh Sultan bin Muhammad Al-Qassbi and the Muslim World League.

The centre is developing relationships with overseas universities, initiating a programme of academic

exchange through scholarships and visiting fellowships and preparing specific projects of research. Dr R. Browning, a fellow of St David's College, travelled thousands of miles over the past three years to help set up the centre.

One of the pioneering institutions in the field of attracting money from the East was Exeter College, which established its centre for Gulf studies in 1978. Funding was made available largely through the efforts of Professor Muhammad al-Ban, who helped raise money from various Gulf states to set up the centre in the same year as a new department of Arabic and Islamic studies was founded at the University.

The centre employs five research fellows and supervises 20 postgraduate students. It houses a documentation unit on Gulf studies as well as holding an annual symposium on the subject. The recent initiatives at Exeter and Oxford and now Lampeter come in addition to existing, traditionally funded centres for Middle Eastern studies, such as those at Durham University, Cambridge University and the School of Oriental and African Studies in London.

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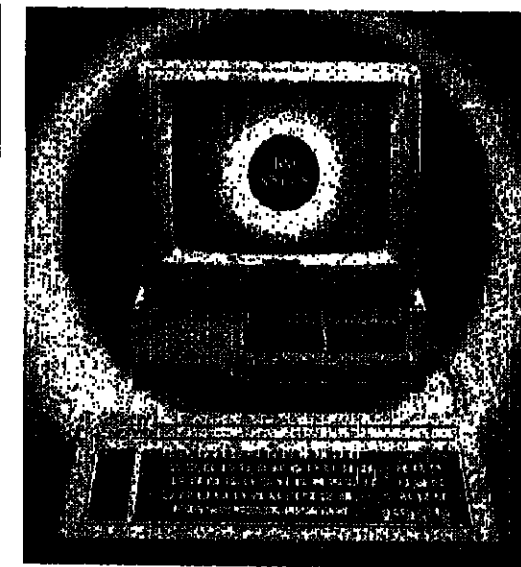
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And they call it Paradise...

Let me say from the start that I'm anti-American. I tell my flag firmly to the mast without any doubt ideologically or tactically. This is not to say that I'm anti-Americans; I once met an American and he was very pleasant indeed! But I can find little good and much bad with their system.

I met a student last week who, because of the inadequacy of her grant is forced to work six nights a week from 6pm to midnight in order to survive college life - a 36-hour week as a waitress in a restaurant where she is "paid" in food parcels and meals. Her job and her method of payment are illegal. And it is, of course, a job that is desperately needed by thousands of others.

I find it sickening that in attempting to force an "American" attitude on to our student population there is no attempt to justify how this could possibly be beneficial to students. Institutions, government or the taxpayer. Do you know, I don't suppose you do, that in Annex B of the Social Security Regulation amendments it is proposed to change the definition of student so that "any student will be unavailable for work during the short vacations and will be discharging from supplementary benefits during those vacations".

So are we to be unavailable for work in order that we can try to find it?

It is not good enough for Sir Keith Joseph to gaze across the Atlantic and pick out the bits he likes. The Adam Smith Institute has proposed that students, in order to be endowed with the entrepreneurial spirit and therefore to have to be reliant on private funds, should find jobs as gardeners and waiters and waitresses (waitpersons?). Well, I've commissioned a research study from the Bloomsbury International Centre for Policy Studies (my secretary's A to Z and my flatmate's calculator). I've discovered that within the 10-acre site of University College London there are six bars and a 1/2 acre of grassland. There are 30 full-time equivalent bar staff and a part-time gardener. There are 8,500 students. We will never have to queue at the bar again or curse the long grass in the summer.

Helicopter companies apart, what's the fascination with America? Why not Japan - the undergraduate pass rate there is very high indeed. Mostly because failures commit harakiri. Perhaps this is the answer to the quest for performance indicators - who needs A level grades anyway? Sir Keith, of course, can't have it both ways. Has it occurred to him that if we have to work - or even spend the wasteful time trying to find it - then we can't study. The libraries would of course continue to be overcrowded - the library is the only place warm enough to sleep as heating the flat is too expensive.

The prospects for Britain's students are bleak. But they raise questions of fundamental importance not just our higher education system but to the attitude we all take to education generally.

After reading the Adam Smith Institute's documents and considering the effects of the proposed further cuts in grant and abolition of entitlement to welfare benefits, I can only come to one conclusion. Modelling ourselves on the USA is a frightening prospect. In the words of a popular 1970s song, "And they call it Paradise - I don't know why."

Phil Woolas

The author is president of the National Union of Students.

V-c joins students in grants protest

by Peter Aspdon

The vice chancellor and the president of the students' union of Durham University have written a joint letter to parents urging them to protest against the Government's plans to cut student grants.

The letter, described as an "unprecedented step", warns that the Government is forcing higher education to a position where "access will be determined primarily by the ability of parents to pay, coupled with their willingness to do so".

"We already know of students who feel that, if these proposals go

through, they will not be able to remain at university. We fear that others will not be able to take up the places which they have been offered.

"This should be a cause of concern to us all: our nation's future prosperity. If it is to be achieved, must be knowledge-led," says the letter.

The vice chancellor, Professor Fred Holliday, and the students' union president, Mr Patrick Martin, describe the Government's proposals to cut the real value of grants and exclude students from supplementary and unemployment benefit as "the largest single threat to student financial support since the

mandatory grant system was introduced."

They point out that the real value of the grant has decreased by at least 15 per cent since 1979, representing a fall of about £320. "We know of the hardship that has followed, especially to students whose parents cannot offer extra help."

The vice chancellor of Exeter University, Professor David Harrison, and the president of the students' guild, Mr Chris Pilgrim, have sent a similar letter to parents, stressing that students were not seeking special dispensation at a time of high unemployment.

Labour may revise awards timescale

Labour leaders are under pressure to establish a timescale for their reforms of higher education and student financial support.

Attempts are being made to win constituency party backing for removal of lower and middle income families from the parental contributions net in the first year of the next Labour Government, with a reduction of the age of full independence from 25 years to 21 over two to three years.

Labour's education team, under no illusions over the priority likely to be attached to higher education in the event of a Labour victory, have set restoration of the grant to its 1979 value, coupled with maintenance allowances for students aged 16 to 19 as the first steps.

Their charter for further and higher education, *Education Throughout Life*, set the abolition of the parental contribution as a long term aim, but it is certain to be towards the back end of the 10-year span of the programme.

The campaign for a more adventurous timetable originates with the National Organization of Labour Students, which has drafted a model resolution for circulation to constituency parties.

It welcomes the aim of the programme in opening out post school education and changing existing structures which perpetuate inequalities, and backs the call for a £35 a week minimum grant for all 16 to 19-year-olds in full time education.

The move comes as students prepare for a demonstration in London next week.



Student leaders handed in a Valentine's Day message to 10 Downing Street as others lobbied MPs at Westminster over cuts in grants and benefits entitlements. Mr Simon Poole, campaigns officer at Exeter University, presented the card.

Adult literacy slump falls to 'exploited' staff

Adult literacy tuition in some local education authorities is now so poor that it barely improves on the service offered 10 years ago, prior to the campaign which highlighted Britain's adult literacy crisis.

In its latest report the Adult Literacy and Basic Skills Unit warns that a huge gap is emerging between the best and the worst of basic education provision by local authorities. And in a minority of local education authorities it is now a matter of fine judgement as to whether provision is better than before the adult literacy campaign of 1975.

"What exists in the most badly resourced authorities depends almost totally on the commitment of inadequately paid, exploited staff and the goodwill of volunteers, and usually the

of what is available is poor," the unit says in its annual report published last week.

A specific and, as far as possible, protected budget for basic education is the most effective way of sustaining provision, the report states.

The unit has also become concerned about marked differences in the type of work undertaken by local authorities. Some are still concentrating on

respite while the more progressive have gone on to incorporate language and provision for the needs of special groups.

ALBSU also highlights problems in the provision of basic education under the umbrella of the Manpower Services Commission, where full-time courses appear to have been aban-

doned in favour of short part-time classes designed to "brush up" on skills.

The unit also calls on educational institutions to operate more flexibly. Few local education authorities offer a year round service, and in the majority tuition ranges from a 26 to 36-week year.

Adults need to be able to join classes throughout the year, and to maintain their studies without long breaks, which lead to a drop in motivation.

The total number of adults who asked for help with basic education during the 1983/84 academic year was 63,258. Of these, 54,343 actually began tuition. During the same period 110,812 adults were attending basic education courses, compared with 108,874 in the previous year.



Mutual understanding: Sir Keith meets Frau Wilms

Meeting of minds who think alike

by John O'Leary

There was something of a meeting of minds last week when Dr Dorothea Wilms, the West German minister of education came to visit Sir Keith Joseph, Secretary of State for Education and Science. They might not speak the same language but, on higher education questions in particular, they certainly understand each other.

Both are faced with continuing controversy over future student demand, the effects of a switch of resources from the arts into science and technology, and new legislation concerning the universities. Both also know the difficulty of pushing through policies without direct control over the institutions involved.

Dr Wilms was in Britain on a three-day visit arranged by the British Council, examining links between higher education and industry and joint courses with German institutions. She visited Oxford University - dining at Sir Keith's college of All Souls - Middlesex Polytechnic and Oxford College of Further Education.

Her meeting with Sir Keith was dominated by continuing German concern over student mobility between the two countries. Dr Wilms stressed later that she would not presume to question another government's policies, but she was concerned about the practice of charging some German students full-cost "visiting students' fees", rather than the home rate to which EEC students are entitled.

"We would ask only that German

students are charged no more than British," she said. "Of course, there are still problems because we charge no fees while you in Britain do, but we must try to understand each other's traditions and try to reach a common approach."

Like Sir Keith, Dr Wilms is acknowledged as one of her party's leading intellectuals although she is not one of Chancellor Kohl's most prominent ministers. With a doctorate in economics and two spells on the research side of the Institute of German Industry to add to her experience in the Christian Democratic Union, she is an authoritative figure.

A minister since 1982, Dr Wilms has faced the most pressing difficulties in higher education, where she was encountered opposition first on student demand projections and, more recently, over the passage of amendments to the university law. This has been made more contentious still by the actions of some of the *Länder*, which have taken the opportunity to add reforms of their own to the package.

The right under the German constitution to a place in higher education has made gauging student demand an even more intractable problem than it has been for Sir Keith. And now she is coming under attack from academics for allegedly putting the country's cultural heritage at risk.

Dr Wilms' answer is that students themselves are now seeing the benefits of opting for science and technology, but that the government is keeping a watchful eye on the arts.

Loans plan unveiled by Owen

by Olga Wojtas
Scottish Correspondent

The leader of the Social Democratic Party, Dr David Owen, has today unveiled a system of student loans which could widen access to higher education.

Dr Owen, delivering the Ash-Williamson memorial lecture at King's University, said there was a "fundamental and economic case for increasing the higher education by the next decade. But if this received specially favourable treatment, it had an obligation to a greater efficiency in using the resources."

Two plans to promote more efficiency and competition in higher education were worth serious consideration he proposed, one leading to action in and among institutions, and the other being consumer-led.

In the first, institutions would charge all students full cost fees. The entire local authority student maintenance grant system would be abolished, and the money given to a University Grants Committee to be divided into research and teaching.

The UGC would be free to distribute funding on the basis of peer review, and in the light of plans for future teaching and research. Universities would also be encouraged to raise for more external funding than is current practice.

Institutions would finance their own student aid fees, which could result in students' fees and maintenance grants, but the interest on bank loans, or even themselves provide loans.

This plan was workable, not least because it was already operating a number of American state universities, although it had been left to individual states to provide their own selection of incentives for moves in that direction, Dr Owen said.

Under the second, consumer-led, plan, the changes were more radical, but the costs could be higher, he said. All 18-year-olds would receive an adult learning entitlement for the equivalent of two years' full-time study. This could be used for full-time, part-time, or periodic study, or a combination of all three, at any time after their 18th birthday, and would comprise a study grant, student element and a fee element, calculated at whatever levels were operating at the time, Dr Owen said. There could be special entitlements for those studying in priority areas identified at the time.

Institutions could offer special entitlements through bursaries and scholarships, and employers could sponsor students. These arrangements would be supplemented by an "academic loans scheme," said Dr Owen, adding that students could take out loans of fees in excess of two years' or topping up basic social security level of support, which could be mortgaged or brought into the taxation and benefit structure.

The funding arrangements for higher education institutions need to be revised to enable them to be more responsive to student needs than at present, Dr Owen added. They would have three sources of income: a grant covering the general public service contribution and a backstop level of research; research contracts for specific projects; and student fees.

In a social market system, there would not have to represent the economic costs of the course as would be accepted that core running costs of an educational establishment would be the responsibility of the state.

Institutions would also be free to offer whatever level and length of course they thought appropriate, perhaps choosing the change the balance between full and part-time study, three and four-year degrees and two-year courses.

There would be no additional cost funding to support these initiatives, but institutions could apply to a new higher education development fund, created by deducting an appropriate figure from the overall core grant. For example, institutions wishing to run weekend programmes, or to extend the academic year from 36 to 40 weeks could be eligible for additional funding.

Universities' stake in state industry 'would pay dividends'

from David Dickson

PARIS
A former French Cabinet minister has proposed that if the current conservative opposition is voted into power in the next month, it should provide each French university with a substantial number of shares in one of the state-owned industrial companies which it has promised to de-nationalize.

The suggestion has been made by M. Pierre Aigrain, who was minister for research in the previous administration of President Valéry Giscard d'Estaing, and is currently the scientific adviser to the president of France's leading electronics manufacturer, Thomson CSF.

In a recent interview, M. Aigrain said that the most important thing that a new government could do to improve the quality of the nation's universities would be to provide them with greater autonomy from the state. And increased financial independence was a

necessary first step in this direction.

"After all, Massachusetts Institute of Technology is the largest single shareholder in General Motors, and the University of Rochester in Xerox. Why should we not have the same situation here in France," says Aigrain, who is a member of the national evaluation committee set up by the socialist government last year to provide regular reports on the performance of individual universities.

He points as a precedent to the Merrill Act passed by the United States in 1862, which set up the national system of land-grant colleges by providing them with an endowment of what had previously been federal land.

Aigrain calculates that the total market value of the companies which the right has promised to sell to the private sector if it returns to power - many of which, like Thomson, were already private prior to the election of the socialist government in 1981 - is

overseas news

more than £150 billion. "I am not saying that all the money from the sale of the companies should be given to the universities," says Aigrain. "But even if you only gave them 25 per cent of the total, distributed between the 77 universities, this would provide each of them with a substantial source of revenue."

Pressure from universities for greater autonomy from the state has become one of the key issues separating the positions of left-wing and right-wing parties on educational policy in the election campaign. The government points to recent reforms that it has introduced, such as the powers that universities now have to enter into research agreements with local companies, as evidence that it is aware of the dangers of too much state control, and keen to allow universities greater independence.

The minister of national education, for example, M. Jean-Pierre Chevènement, has said that he believes greater

competition between universities for the best students is needed to encourage universities to raise their teaching standards, and that this can only be achieved if they are given the freedom to compete.

The two main opposition parties, however, argue that the effect of the new higher education law introduced by the government at the beginning of 1984 has been to move in the opposite direction, for example by increasing the role that trade unions close to the government are able to exercise over university policy.

In a joint manifesto published in Paris last month, the two parties pledge themselves to repealing this law if, as is generally expected, they are voted into power, and said that they would pursue "full autonomy for universities."

This would allow individual universities to award their own degrees - at present, all university degrees are supposed to meet a single, national

standard - and would also make possible the creation of new, private universities similar to those that exist in the United States.

M. Aigrain's ideas are said to be among a number of proposals that the two parties are currently studying closely with a view to offering their own higher education law if it is felt that substantial changes are needed. He also says that another way of avoiding universities remaining excessively dependent on direct state funding would be to increase tuition fees - all French universities are currently free, apart from a nominal enrolment fee - and to complement this with a system of student loans.

"These loans would be obtainable through an automatic procedure, with a maximum level decided by the government," says Aigrain. "As far as paying back the money is concerned, I am in favour of the Swedish system in which the rate of repayment is proportional to an individual's income tax."

Guardians role in danger

from Barbara von Ow

MUNICH
West German universities must revise the role of university professors and the structure of higher education to avoid losing their role as guardians of science and culture, a leading academic has warned.

Professor Hartmut Schiedermaier, president of the university professors' association, called on the universities to face the challenge of defining a "new culture" for the post-industrial age. The role of the universities as the leading authorities over science and culture was becoming increasingly eroded, Schiedermaier noted. Moreover, science had become separated from the realm of culture. On the institutional level, this was evident in the creation of separate ministries for research which now controlled part of the universities.

Under these new conditions, the universities were in danger of being reduced to "useful servants" Schiedermaier said. The political parties today regarded the universities as a "machine in which you put DM100 and expect DM200 to come out at the other end after six months."

With "efficiency" now the key slogan, academic performance was being increasingly evaluated in quantitative rather than qualitative terms. Moreover,

higher education was becoming more and more rigidly structured, with the result that academics were gradually turned into "teaching professors" with little or no time for research.

The growing "hierarchization" of higher education was changing the professional image of the university teacher profoundly, Schiedermaier noted. Academics made their careers in the same universities where they were trained and the universities were no longer forced to compete for the best brains.

Nothing threatens the competitiveness of German higher education more, he said, than this progressive transition to the "civil-servant-professor." So far all efforts to overcome the "organized mediocrity" at Germany's "mass universities" had failed, he said.

What was most needed to counter this trend was to re-establish a link between science and culture and to get away from the "shallow fascination of quantitative success."

The first priority was to put the arts and humanities back on an equal footing with the natural sciences, he said.

Interestingly, industry did far more at present than popularly believed for the role of the arts, while the state still had not accepted its task as a "patron of the arts."

Swedish students demand salaries and debts amnesty

from Donald Fields

HELSINKI
Student salaries and the writing off of all debts incurred while studying are being demanded in a petition signed by graduates throughout Sweden.

The appeal, passed down a long human chain in the form of a letter, has been inspired by two municipal social welfare secretaries, Pia Hellertz and Betty Möller, who considered they had entered a vicious circle of debt repayment in which new loans had to be constantly sought as a means of financing one's needs.

Ms Hellertz and Ms Möller took up the cudgels after noticing that an extraordinarily high share of their

clients among the 500,000 Swedes who annually seek social assistance are graduates with steady jobs and salaries commensurate with a reasonable living standard.

The worst affected graduates work in the social services and teaching, but other professions are complaining about being dragged into a seemingly bottomless pit of debts that cannot be repaid.

The petition, originating in the provincial town of Örebro has been so well publicized that it is bound to attract thousands of signatures. A high proportion of the aggrieved have qualified not from standard universities but from high schools that form the other pillar of Sweden's career-orientated tertiary education network.

State aid decision is a Pyrrhic victory

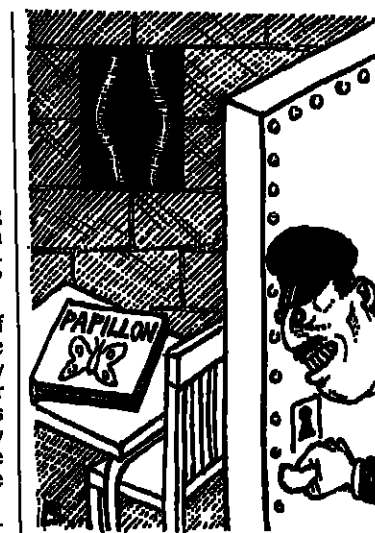
After a legal battle lasting six years, the United States Supreme Court has ruled that a blind student can use state aid to attend the theological college, without offending the constitutional bar against the association of church and state.

The unanimous decision has met with predictable applause from Education Secretary William Bennett, but for the student involved, Larry Witters, the fight is not over yet.

Mr Witters made his application for financial aid in 1979, under a vocational

aid education programme operated by Washington state's department of services for the blind. It was rejected by the department, and then by a lower court, on the grounds that the state constitution forbids any public money to be spent on religious instruction. Undeterred, he took his fight to the state supreme court, only to be turned down again - this time because the judges held that his application was against the federal constitution.

It is this verdict which has now been overturned, the supreme court ruling,



Writing on the prison wall

from William Morris

WASHINGTON
Illiterate inmates of prisons in Virginia will shortly have a strong incentive to learn to read: unless they do, they will not be released on parole.

Virginia's new governor, Gerald Baliles, has ordered the new policy as part of a plan to combat recidivism. "Education must be given a far higher priority in prisons," he said this week. "Far too many prisoners are also prisoners of illiteracy. When released, many can't function in a complex, fast-moving society. Many cannot read and write well enough to fill out job application forms or balance a cheque-book. They return to what they know too well: crime and prisons. The recidivism rate reflects it. We must stop it."

The statistics of recidivism which prisoners will be expected to achieve has not yet been laid down. Nor, at present, is there any specific programme to teach reading in Virginia prisons. Governor Baliles says that he intends to put that right by adding almost \$1 million to the budget for prison education.

Public reaction to the proposal has been mixed. The *Washington Post*, with some qualifications about the fairness of the scheme for those who simply cannot learn, described the idea as "laudable." But columnist William Raspberry, writing in the same issue, called it "intriguing, well-motivated, and doomed."

They sent the case back to the Washington Supreme Court with the observation that "the state court is of course free to consider the applicability of the far stricter dictates of the Washington state constitution."

Larry Witters, who cannot see, had trekked his way across the continent to look for justice. He must now find his way back to his home state in the far west - and start all over again.

China declares war on examination cheats

by Geoffrey Parkins

The Chinese State Education Commission has issued new rules on university and college entry requirements designed to halt falling entry standards and stop malpractices.

The commission says that during 1985, entry procedures and standards were thrown into disarray when a large number of institutions lowered entry examination requirements or disregarded entry rules altogether for students whose fees were being paid for by their employers. In some instances, employers (who are charged fees at a higher rate than for ordinary students) and institutions were actually found to be engaged in what simply amounted to the buying and selling of student places.

The commission said it firmly believes the policy of providing companies with training places for their employees at universities and colleges benefits the economy, but tighter regulations were now required to ensure all students meet academic entry requirements in future.

The prestigious Beijing University is meanwhile having problems with students cheating in examinations. Following complaints from students over recent months the university has decided to introduce special measures to curb what it sees as a growing tendency.

In response to the complaints, university president, Ding Shisun, has placed "control of cheating during exams" at the top of the list for "combating unhealthy trends" in the university, which he says has the effect of discouraging conscientious students and lowering standards.

Courses

International Specialist Seminar

University administration

21 September - 9 October 1986, at St. Andrews/Edinburgh

The seminar will aim to provide senior university administrators with an opportunity to explore together a number of important issues in the management of their institutions.

A major theme of the seminar will be concerned with efficiency in university management. Some recent experiences in Britain and elsewhere will be used to stimulate the examination of issues in a wider international context, embracing developed and developing countries, and participants will be encouraged to contribute fully from their own experience.

The Director of Studies will be Dr Martin J B Lowe, Secretary and Registrar of the University of St Andrews.

The seminar is intended for senior and chief university administrators (and their deputies), including executive heads, secretaries/registrars, bursars and deans.

There are vacancies for 30 participants.

Fees £855 Residential only.

The seminar will be divided between two venues in the East of Scotland. During the first week it will be accommodated and will hold most of its sessions in David Russell Hall, a modern residence on the outskirts of St Andrews. For the second week the seminar will move to Edinburgh, and will be accommodated at a hotel in the centre of the city.

Further information and application forms are available from British Council Representatives overseas or from Courses Department, The British Council, 66 Davies Street, London W1Y 2AA.

The British Council

overseas news

Student unions blamed for ills

from A. S. Abraham

BOMBAY

In a policy statement on higher education, clearly designed to influence the framing of India's new education policy, the University Grants Commission has made an unconventional hard-hitting analysis of the ills afflicting higher education and has proposed remedies.

It says that student indiscipline is the most serious recurring problem and attributes this to the baneful influence of student unions. "First of all, we have to re-examine the relevance and place of student unions in our universities and colleges," the UGC says.

"The concept of elected representation introduces an atmosphere of conflict and competition among student groups which often disrupts normal functioning. There is enough experience to suggest that, as they have been functioning, student unions shall have no place in our institutions of higher learning."

The UGC suggests a code of conduct and discipline which students must swear to adhere to before admission. Instead of unions, it wants the formation, with official encouragement, of student associations, clubs or study groups for social, cultural and other non-political activity. It also wants

students whose academic performance is consistently poor to be expelled, something the present system does not provide for.

Estimating, conservatively, that higher education enrolment at the end of the century will be double that of today, the UGC wants distance learning and open university facilities to be set up on a big scale. At the same time, admissions to full-time courses should be rigorously selective if consolidation and qualitative improvement are to be accomplished.

The UGC is strongly in favour of autonomy for the 5,500 colleges affiliated to universities under the present system. "Both experience and commonsense," it says, "suggest that if these colleges have to work and grow, parent universities must practise maximum decentralization in favour of these institutions and fully respect the autonomy of their governing bodies."

It wants existing university acts to be amended to provide for the declaration of merit-worthy colleges as autonomous. Autonomy has to be selectively conferred.

The UGC comes down heavily on both continuous evaluation and internal assessment, two of the main examination reforms that have been introduced over the last few years. It says categorically: "Instead of raising standards, the reforms only serve to

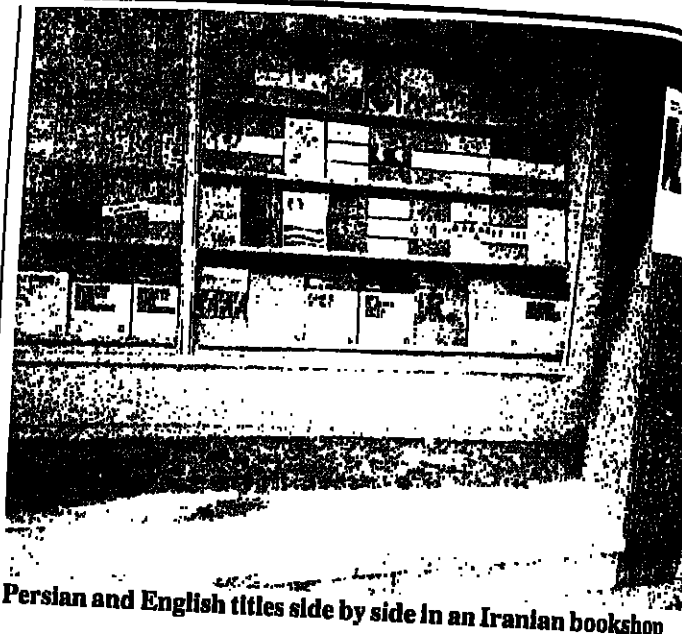
dilute them further. Many universities have gone back to the annual external system."

The UGC does not spare teachers whom it considers a factor of critical importance in raising higher education standards. "However unpleasant the truth the fact has got to be faced that far too many of our university and college teachers today are failing to teach," it says.

It cites in support of its censure of teachers the report of the National Commission on Teachers of Higher Education which found that many teachers take their duties lightly, do not prepare lectures, dictate notes which have not been revised for years, absent themselves frequently, and ignore individual student problems.

The UGC wants the appointment of teachers of only those who have a demonstrated aptitude for the profession. It also wants a national testing service to ascertain scholastic and pedagogic ability.

Finally, the UGC wants higher education to cost more. At present, up to 95 per cent of higher education costs are subsidised by the state, and it wants the subsidy to be progressively reduced, even as fees should go up correspondingly. For poor but deserving students, it recommends plenty of generous scholarships.



Persian and English titles side by side in an Iranian bookshop

Science subjects set Iran a textbook problem

by Dilip Hiro

While the general direction of Iranian higher education must seem satisfactory to the Islamic authorities, certain specific problems remain to be tackled. These are: textbooks, relations between universities and theological colleges, military of certain University Crusade groups, and the role of the recently established Open Islamic University.

Though Iran University Press, the sole publisher of textbooks, brought out 80 new books last year, its total so far of 200 is only one-tenth of the number needed. Meanwhile, students have to make do with photocopied lecture notes.

One of the major tasks of the IUP is to produce textbooks in pure sciences, engineering and medicine in Persian. "We won't be like India or Algeria where they have to be taught in English," said Dr Nasrollah Pourjavadi, director of the IUP. "We want to develop Persian to express scientific ideas."

Some progress has been made, but problems are immense. "You need expert training to handle Persian expressions in a new or fast developing science," Dr Pourjavadi said. "We had the facility for this in mathematics even before the revolution, since the old professors had made the link. We are just getting into chemistry. Our progress in medicine and pharmacy has been poor. We thought we could manage physics, only to find that there are so many different ideas and terminologies."

Inevitably there is compromise. As an IUP brochure states: "Since Persian translations are limited and not always up to date, a majority of university courses require foreign language supplementary reading." Therefore most students have to take English language classes. To facilitate the process the IUP has published a series entitled *English for Special Purposes*.

In order to keep up with the latest developments in science, technology and other fields, Iran has to import foreign books. The task of importing and distributing foreign titles is undertaken by the IUP. Its average annual imports amount to 10,000 titles and 200,000 copies.

State scheme to pay now, study later

Study now, pay later, has long been the rule for higher education students in the United States. In Michigan that order is about to be reversed. Under a scheme proposed by Governor James J. Blanchard, parents will be able to purchase, years in advance, certificates redeemable for four years of tuition at any of the state's 15 public colleges and universities.

The plan, which has to be ratified by the state legislature, is the first of its kind in America. It would enable parents to pay for certificates in annual instalments, or through bi-weekly deductions from their pay cheques, and it would insure them against inflationary rises in tuition rates.

Proceeds would be placed in a trust and invested by the state, being paid out later to the colleges at which the

Supreme Council for the Revolution aims to end the division that currently exists between military and theological colleges. Ayatollah Khomeini once called for the ultimate merger of Tehran University and Faiziya, the leading theological college in Iran, to produce new leadership in Iran.

Progress in this direction has been tawdry. Most of the professors who come from university professors who argue that a traditional Islamic university in its courses and methods of teaching that a merger is unthinkable.

The most that should be realistic hoped for is a close co-operation between universities and theological colleges, with religious scholars playing a leading role in raising Islamic sciences of the university teachers and students.

Those who are active in the University Crusade think otherwise. The University Crusade, open to both students and teachers, was launched by the SCCR with a view to clearing the universities of un-Islamic ideologies and persons.

When the universities and colleges were completely shut from June 1982 to September 1982, the University Crusade activists proved useful in thought to be imbued with Western Eastern ideologies.

Last summer the crusade activists Tehran University mounted a campaign against the chancellor who, said, had been reinstating some of the achievements of the cultural revolution. Yielding to the pressure, the chancellor resigned.

There is also controversy about the role of the one-year-old Open Islamic University, modelled on British Open University. It was started originally with a view to providing higher education opportunities to citizens, nothing more.

By now, however, there is a strong lobby for issuing diplomas to those who qualify, and treating them only with graduates of conventional universities. This is being opposed by the university academics. The final decision likely to favour those who take an egalitarian view of higher education.

Public college officials have given their tentative endorsement, but there has been concern among private institutions that it might place them at a disadvantage. The Association of Independent Colleges and Universities of Michigan is to ask to be included in the scheme.

The country was gripped by economic crisis and the Treasury was demanding cuts from the University Grants Committee. Such a thing is unthinkable, said the UGC chairman, shooting grouse in Scotland, and sent a telegram to the Treasury to say so. He won.

Then there was the time the UGC nearly resigned en masse over - would you believe it - university teachers' pay.

And the story of Lord Bowden, given leave of absence from his post as principal of the University of Manchester Institute of Science and Technology to become minister of state, responsible for higher education. His first move was to tell Sir John Wolfenden, then UGC chairman, to say he intended from time to time to chair UGC meetings.

Sir John demurred and suggested he should chat it over with the Permanent Secretary, Sir Maurice Dean. Sir John had a private word with Sir Maurice and when Lord Bowden went to see the civil servant, Sir Maurice rose - and with a sweeping ironic bow gave him his own seat.

These stories and many more are told in *Government and the universities in Britain: programme and performance 1960-1980* by John Carswell. The first incident took place in 1951. The second two occurred during Carswell's long stint as a civil servant in the Treasury, Department of Education and Science and at the UGC. He was also secretary to the British Academy before his retirement in 1984.

Carswell's career began in 1946, after the army and St John's College, Oxford, where he studied history. After becoming principal private secretary to the Minister of Pensions, he joined the Treasury in 1960 as an assistant secretary.

It was a heady time. The Robbins committee was about to materialize, higher education occupied the political stage and was soon to be seen as the instrument with which to modernize Britain. Universities were popular, and led by men of stature.



The civil servant's tale . . . Reminiscences of Robbins: John Carswell talks to Ngaio Crequer

John Carswell with a recorder given to his mother by her friend, D. H. Lawrence.

Carswell's book, inevitably, is dominated by Robbins - the promise, the achievement but also, with hindsight, the failures and the seeds of some of today's continuing problems.

One of the themes of the book is the passage from euphoria to despair. "I set out in the early 1960s keen but trying to moderate the wild enthusiasm with which I was surrounded. I was trying to put on the brakes but failed."

"Then, at the end, as secretary to the UGC, I found it impossible to raise even the most essential money. 1973 was the beginning of the rot as far as the money was concerned. On top of that there were the student troubles and the public reaction to it."

"Now I read that the teachers have settled for 5.25 per cent and I think that is pathetic, it hardly compensates for inflation. It shows a lack of any regard for them. The whole picture is wretched but the fact remains that you have got a bigger

and in many respects brighter higher education system than you had."

But at the beginning, as one of the assessors to the Robbins committee, he knew they were making history. "I was thrilled to be a part of it. The report transformed society, everything has changed since then."

In the book he describes Lord Robbins as "a blond silver lion, all mass and whiteness". He is pleased to have been able to work with him. "He was autocratic in many ways, he insisted on getting his way and he could be difficult."

"He liked civil servants - though not all of them. He lost confidence in the secretary to the committee and totally excluded him. The man tried to write bits of the report as he saw it but Robbins didn't like it. So he cut him off and his career was blighted. He never got promoted after that."

In Robbins' own autobiography he gives curiously little space to his report, as though he didn't rate the



handled the cuts and believed money should have been distributed without selectivity or making judgements about each.

Reading the book, one is struck by the same old problems continually cropping up: the need for more science and technology students ("I have heard this gramophone record played again and again") but still not enough understanding of the relation between schools and higher education, the undermining of institutional autonomy; the implications of student support in a big expansion of numbers; and the need to make universities accountable.

After the Treasury John Carswell became the under secretary responsible for the universities in the newly founded Department of Education and Science, and then after an interval of six years, became secretary to the UGC.

He is also a minor historian, with several books, mainly on 17th century history, to his credit. One is in the Civil Service and one, written in 1960, but still acknowledged as the best on the subject, is on the South Sea Bubble.

He thinks the UGC is moving into uncharted waters by seeking formula funding. It should not get into the position of financing specific initiatives at particular universities, a development which was not foreseen. The UGC is there to finance institutions not subjects, he says.

"The Robbins approach is an immense preoccupation with institutional shapes and a neglect of the substance. A university is like a jug you pour things into."

On the question of accountability, he says he tried, from the middle 1960s on, to get universities to set up their own efficiency studies. "But all the Jarratts in the world will not give you the answer to the question of how to measure the efficiency of an academic."

Carswell still keeps up with events, is writing another book and is very interested in politics. But sometimes, he says, he cannot bear to read about what is happening.

Cornish mine of information

Charlotte Barry digs up the facts on the Camborne School of Mines

Go anywhere in the world, they say, and gaze down a deep hole. At the Camborne School of Mines.

It is no accident that one of the most distinguished mining schools in the world is situated in the far south-west of Britain. Nowhere else in the country has so much of the mining student - Cornwell is a geologist's dream. Its rock formations are the most complex, interesting and diverse in the British Isles.

It has also been one of the most important mining areas in the world. At different times during the 19th century, Cornwell produced more than half the world's copper and tin, as well as many other metals.

Camborne School of Mines still has close ties with Cornish tin mining, which is now facing extinction because of a slump in the world market. But these days the college deals with all minerals all over the world. It has never had anything to do with coal.

For an institution that started to offer degree courses only just over a decade ago, it has come a long way. Since the Miners' Association of Devon and Cornwall set about improving its members' education in 1859, the school is the home of the largest UK, which the Government sponsors to the tune of £2.1 million a year. Last year it was the only monotechnic chosen to receive extra research funds from the National Advisory Body - an annual £100,000 for three years.

About the same time its teaching and research facilities got an almost unbelievably glowing report from Her Majesty's Inspectorate. On the minus side, it is suffering an unprecedented 25 per cent drop in student applications compared with this time last year. But although this suggests it is the start of a worrying downward trend.

Overall, Dr Peter Hackett, the principal, is proud of the school's gradual achievement and its solid foundations. "We have been pretty successful," he says. "We are a unique sort of place - even the NAB is thought so."

"Cornwall is like a huge outdoor lab. It is a decided advantage having a

school of mines set here in the heartland of a highly mineralized area that has some operational mines."

For a relatively small college with fewer than 300 students, Camborne is top heavy with research staff. Out of about 130 staff, 65 are engaged on research activities alone. The 25 or so teaching staff in the departments of mining, processing, mining and surveying, engineering and mathematics, and geology, all graduated from British institutions. But they have worked all over the world.

Mr Roger Parker, a metallurgist and the vice principal, says most teaching staff are engaged in research mostly directly related to industrial problems. Consultancy work is particularly encouraged. "We're very keen on our staff making contact worldwide. It keeps them in contact with current practices," he said.

Mr Parker's own recent experience is typical. During a six month sabbatical last year he spent two months in a tin smelter in Malaysia, where he was asked to look into certain problems.

"This has given rise to some new research for myself and I have now got a PhD student working on a tin smelting problem which is partly funded by the company I worked for out there. So the original consultancy has brought work back into the college," he explained.

Undoubtedly the jewel in the school's research log is its renowned "hot rocks" or geothermal project. The whole thing began when Dr Tony Batchelor, the project director, decided to look at the problem of high temperatures underground, particularly in tin mining. He then began exploring the possibility of exploiting this natural heat as a form of alternative energy for space heating and power generation.

Fifteen years later the project attracts £3½ million annually under the Department of Energy's renewable energy research and development programme. Based in a disused granite quarry, it employs about 20 scientists and 30 support staff and is one of the two foremost hot rock research programmes in the world - the other is in New Mexico.

It has been a painstaking engineering process, beset with problems. Water is pumped down deep wells, only eight and a half inches in diameter, drilled one and a half miles below the earth's surface. The rock's natural heat raised the water to boiling point and it then rises to tanks on the surface.

The next stage will involve drilling down four and a half miles, where the temperatures are 220°C, providing the Government renews its contract in September.

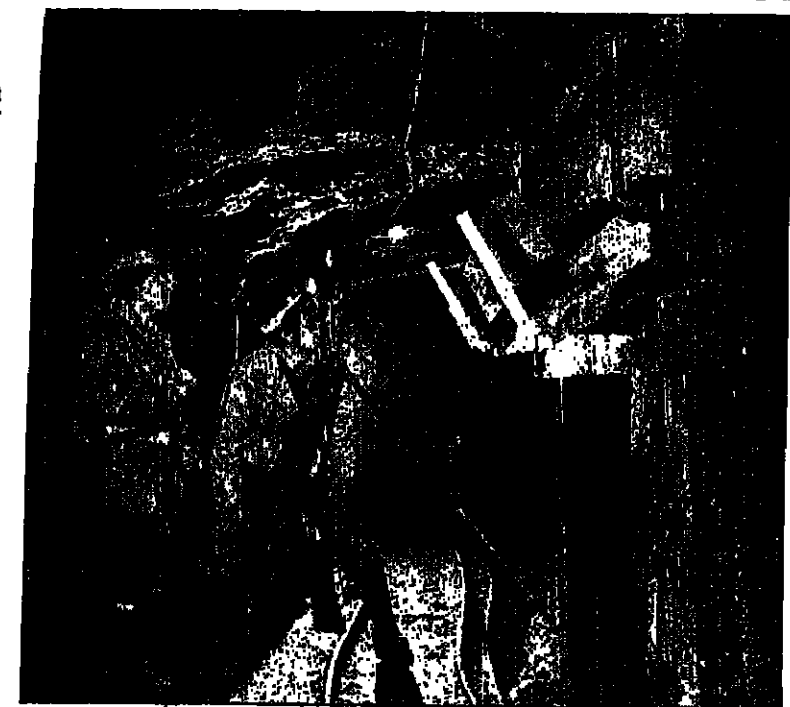
So far the team has failed to get reassurance about future funding from the Department of Energy. So there's a danger Britain could lose the whole project to the United States.

Also unique to the Camborne School of Mines is its own tin mine, only three miles from the campus. All undergraduates on both the mining engineering and the mineral process engineering degree courses attend a two-week induction course there, where they are introduced to an underground working environment, learn to handle mining equipment and are taught blasting methods.

Dr Anthony Brooks, a senior lecturer in the mining department and manager of the mine, said: "It's an underground laboratory really, and it's invaluable. If I want to spend an afternoon teaching students about blasting and use of explosives I can bring them to realistic surroundings."

As well as the two undergraduate degree courses, the college offers an MSc in mining geology, a Higher National Diploma in engineering and a postgraduate diploma in mineral technology.

Except on the MSc course, women are notable by their absence, although the school actively encourages them. There have only ever been two women undergraduates and one was awarded the gold medal for the best student in her year.



Students survey in Camborne's own mine at Great Condrurrow.

Certainly Camborne seems to attract young men who are extrovert, boisterous and exceptionally keen on sport, especially rugby. "There's an element of destructibility about our students," said one member of staff, who also remarked on the absence of petty vandalism or graffiti. The students' union is not affiliated to the National Union of Students.

Any determined Camborne student will find a job on graduating - the demand for minerals engineers is still buoyant all over the world. About half of new graduates go straight to work in this country, increasingly in civil, petroleum and production engineering and in quarrying and underground construction work.

Yet applications are down - by as much as 25 per cent. Mr Howard Hoy, the school registrar, says it is regarding this year as an aberration. But he does blame a combination of factors.

The Government's foreign student fees policy has caused the proportion at Camborne to drop from one third to only about 5 or 6 per cent. The extra money made available to universities

to switch students to science and technology has also had an effect.

Although the school recruits nationally, it does not belong to UCCA, the universities' clearing house, or to PCAS, the polytechnic equivalent.

But the college is also aware of what it calls the "Scargill factor". "The general perception of mining over the last few years has not been helped by its media presentation," said Mr Hoy. "In particular it has not been seen in a good light since the coal strike."

The current world tin glut and the suspension of trading on the London Metal Exchange has also led to some speculation about how this will affect the school's future. But although 6,000 jobs in Cornwall depend on the outcome of the tin crisis, college staff are not too worried.

The closure of Cornwall's tin mines could have a serious effect on the college's morale, according to Dr Roger Parker. "But I am sure we would continue," he would just have to change certain emphases," he said.

1350 في الشرق

Every new research institute is a giant experiment, and like any experiment it may not work. The Medical Research Council's verdict on its costly experiment with the Clinical Research Centre at Harrow, only 15 years old, is that it has not worked well, and there is little prospect of improvement.

When the CRC was opened in 1970, it was a bold venture which committed the council to a new model for advancing clinical research - work with disease sufferers rather than basic biology. The £10 million a year centre was designed as an integral part of a new NHS hospital at Northwick Park, following a deliberate decision to link it with a district general hospital dealing with the most common diseases, instead of a specialist teaching hospital.

But the review of the centre published by the MRC earlier this month questions both the CRC model, and its application at Northwick Park. The review, led by the former director of the Imperial Cancer Research Fund, Sir Michael Stoker, says the Clinical Research Centre should be merged with the Royal Postgraduate Medical School at Hammersmith - to create a single national centre for clinical work.

If the recommendations are carried through they will mean a complete reorganization of the Medical Research Council's three largest centres. Aside from the CRC itself and the Hammersmith School - which is part of London University but supported by the MRC to the tune of £6.3 million a year - Stoker's group want to include parts of the National Institute for Medical Research in any new centre. This is to bring a strong basic science element into the proposed clinical complex.

The complexity and cost of follow-

Prescription for disaster?

Jon Turney on the parlous health of a costly experiment in clinical research

ing Stoker would be great. The CRC took 10 years to set up after the formal go-ahead in 1969, and that only involved the health service administration, the council and the Department of Health. The new merger would involve the university authorities as well. And there must be serious doubt over the MRC's ability to find the capital for the merger quickly. In the meantime, the 450-odd staff at the CRC work on knowing Stoker's final word is that if the merger proves impossible, the centre's research teams should be dispersed to universities.

The judgement is worrying because it may not be within the MRC's power to bring about the proposed merger - but it could run down the CRC much more easily. If that is the outcome, it is bound to face strong opposition from the centre's outspoken director, Sir Christopher Booth, who Stoker recognizes as one of the most eloquent advocates of clinical research.

Sir Christopher has to contend with a widespread feeling that the CRC has not fulfilled its promise and, perhaps, with a bias against clinical work among biologists who are more at home at the bench than the bedside. Stoker's report stresses that his committee was not asked to evaluate the CRC's research output in detail, but it offers a harsh overall assessment. "We have to admit to

disappointment at the perceived standing of the CRC as a whole. Many of our witnesses volunteered that the centre has been unsuccessful in making itself known and thus establishing itself as a major force in clinical research in the United Kingdom. . . the whole does not appear to be as great as the sum of its parts."

Booth's response is that a reported perception is no substitute for a proper examination, especially when the perception is based on hearsay rather than direct experience. He says he has never had a visit from a clinical professor in a UK medical school - "the clinical academic community in this country has been singularly uninterested in the centre. . . most academics prefer the medieval frontages of Oxbridge".

On the other hand, if the academics don't know where Northwick Park is and don't want to find out, £10 million a year is a lot to spend on an isolated institution simply to combat traditional prejudices. And this is only one of the structural problems affecting the CRC.

The council's review points out that the reorganization of the National Health Service in 1974 prevented creation of a board of governors for Northwick Park Hospital with direct links with the DHSS, as originally envisaged. And the regional health authority, while anxious to keep the research centre on its patch, has not taken much interest in its development.

At the same time, the MRC employees and health service doctors on the Northwick Park site have grown into two separate communities. The original plans provided for split

appointments, but few of these now exist and staff appear to focus either on patient care or research. According to Stoker's group, "the symbiotic relationship of MRC and NHS staff which we understand to have been a real feature of the early days seems largely to have disappeared".

Indeed, symbiosis seems to have given way to rivalry. The report records that the council is not happy with the director's weak influence on NHS appointments at Northwick Park, and that for their part medical staff want more say in development of the CRC's research. The MRC also disapproves of the increase in private practice among consultants, which the council holds is generally incompatible with serious clinical research.

Some of these problems are endemic to clinical research, as Stoker recognizes. Financial pressures and the need to combine two kinds of training are powerful disincentives to a clinical research career anywhere in Britain in the 1980s. But the CRC is again handicapped in attracting new recruits by its lack of connection with postgraduate medical training.

The review draws a number of unfavourable comparisons with the Royal Postgraduate Medical School, the council's other main clinical centre. The RPMS is said to have well-integrated clinical and academic staffs, to be successful at attracting bright young doctors, and has a wide range of medical specialisms which can be used as a base for clinical research. The recommendation that the council consider a merger looks like a proposal to concentrate all the work at Hammersmith - for example

the review says the new centre must have a university base with postgraduate teaching commitment. This condition is probably impossible to fulfil at Northwick Park.

Stoker's report stresses the group was not asked to test the feasibility of any recommendation. In particular, the call for moving parts of the National Institute for Medical Research to the new integrated clinical centre is a counsel of perfection. The NIMR has a new director recently installed, and the institute has been a major site for investment, which would be wasted if any transfer was ahead.

But the review is firm about a need to shift from the CRC. And means a move away from a model of clinical research linked directly to most common diseases, most at encountered in an ordinary district hospital. The CRC philosophy has been to build research around afflictions weighing most heavily on the population - from allergy to arthritis to schizophrenia to venereal disease. Stoker's report argues that tying decisions to research priorities to the incidence of different diseases does not meet the pattern of scientific advance.

But if the diseases targeted by attack are selected on scientific grounds, the rationale for a link to a district hospital goes.

The conclusions reached from the council's discussion of Stoker's report will shape the MRC's clinical research effort well into the 21st century. But it already looks as if the CRC's future role will be much reduced, if it survives at all. The experiment may soon be over.

Clinical Research Centre Committee. Report to the Medical Research Council. MRC, 20 Park Crescent, London. WIN 4AL.

time appointments to contract post and fellowships, which could pave way towards easing restrictions on women out of science and engineering academic jobs.

But Professor Jackson uses the word "flexible" repeatedly, because she knows how many people need to know what is keeping them out of academic jobs. "I'm not sure these conditions fit all that many cases either," she says.

"Women are getting stopped by job adverts, by the preconceptions of the people who draw them up, and initial selection," she says. "Why say work so many hours, instead of calling a job full-time? Then we could work out how to combine work and family once they were in, rather than being kept out at the start."

The money for the scheme has come from the Leverhulme Trust. The Institute of Physics, British Gas, British Telecom and GEC have sponsored fellowships. It is extremely long-term industry to support a programme bringing people back into academic jobs.

Dr John Brown, director of research at GEC said even though fellows were likely to stay in academics, industry would benefit. "We only get staff if the university produces them."

Dr John Alvey, engineering director at British Telecom said industry had a shortage of engineers and that the role women could play in engineering was a "shocking waste of highly skilled people".

Professor Jackson hopes to see £400-500,000 for the scheme over the next two years. If the scheme is successful, it would be a match funding from the Social Fund.

Her attempt to raise money has been unsuccessful. The Grants Committee was told that funding of a scheme for women would be illegal under the Discrimination Act. The Science and Engineering Research Council has modified its regulations and now explicitly allows part-

PRIME

Peter Aspden talks to Robert Rhodes James about his refusal to 'defend the indefensible'

Liaison (milit.): Combination and co-operation of allied forces or arms of the same force. Hence liaison officer. One needs look no further than the *Shorter Oxford English Dictionary* to understand how Robert Rhodes James, MP for Cambridge and as well-informed a commentator on higher education as any in Westminster, became one of the less-publicized referees from Mrs Thatcher's beleaguered team of spokesmen just before Christmas.

His resignation as the Government's higher education liaison officer - a Prime Ministerial appointment - hardly came as a surprise: the two subjects which have preoccupied most of his life, the Conservative party and scholarship, have been neither combining nor co-operating in recent years, and not many observers would today describe the two spheres as allied forces.

As far as resignations go, Mr Rhodes James's fateful act bore no trace of the impetuous melodrama or embarrassed shuffling of more recent examples. Neither, naturally, did it make as good copy, although it did merit a front page piece in - significantly - the *Daily Telegraph*. He simply made clear to the Prime Minister that he could no longer support the Government's policies on higher education, to "defend the indefensible".

The final straw was the 2 per cent increase in the student grant which, in tandem with the abolition of the loan review and the annual 2 per cent cut in university funding, made his position impossible. "It became clear that my advice was being totally ignored, and I was not prepared to tour the country in defence of something I didn't believe in," he says. He will, in the classic phrase, "do much more good to the cause from the outside".

As well as his obvious Cambridge connections, he has been a fellow of very few parliamentarians to have run a research department, as director of the Institute for the Study of International Organization at Sussex University. He has deliberately continued to give scholarship a large chunk of his attention since becoming an MP in 1976; later this year sees the release of his biography of Eden, and he has written extensively on British political history.

When he was appointed to the higher education post, which had been created some years earlier by Mrs Thatcher because she felt the Conservatives were "losing the intellectual argument in the universities", he insisted that it did not remain a purely party political job. That perhaps explains why, when things started to go wrong, he felt more acutely than most the conflict of loyalties. He nearly resigned last year during the tuition fees fiasco, and has never hidden his scorn for the Government's Green Paper of last spring.

"It was a bitter disappointment to me, as well as being pretty well illiterate. To think that the only answer to our problems was to call for more contraction is a sick joke. The whole thing was a big mistake, as has been shown by the uniformly hostile reaction to it."

Mr Rhodes James's anger has, on the whole, been confined to issues rather than the personalities behind them. Peter Brooke, he says, found himself in an awkward position, and was misused by higher education. As for the Secretary of State himself, the situation is "indefinitely more complex."

Mr Rhodes James remains "devoted" to Sir Keith Joseph, who he thought would make a marvellous job of higher and further education on his appointment. The secondary sector, but in fact it has proved completely the opposite. He is fundamentally right to be worried about standards in schools, but he just seems to have a blank about higher



Robert Rhodes James, MP for Cambridge

Officer who made a tactical withdrawal

education. He laments the fact that our competitors produce more scientists, but we can do just as well providing there is Government support.

"He has not really fought his corner against the Treasury - at one education committee meeting, he was asked directly if he was the Education Secretary or Chancellor of the Exchequer. I'm afraid the last talk I had with Keith before I resigned confirmed all my fears. All he wanted to talk about was money, and the gulf in attitudes had become unbridgeable."

Endless discussions behind the scenes, deep thinking and an unshakable faith in the power of rational debate, Mr Rhodes James is something of an anachronism in today's politics. He talks openly of his good friends in the other political parties, and records with sorrow that Conservative selection committees are planning for "PR men and accountants" to fight their constituency battles.

Higher education should be a period of joy, of intellectual opening. You can't just keep talking about money.

Commons debates on higher education, a subject he thinks should be at the top of the national agenda, are frequently "awful and empty". "It is immensely depressing. There are so few people who have actually had the experience and know what it is all about. Anyone can make a speech, but you have to care about it."

Logic and cool discourse is also the key to the universities winning their case, he believes, describing last year's treatment of Mrs Thatcher by her old university as "disastrous". "To say that didn't help the case is understating the matter. Margaret was much more upset than she let on. It was a petty, childish gesture."

Despite his disidence, there are naturally many points of agreement between Government policy and his own position. Devoted historian as he is, he was firmly in favour of the 1981 shift in emphasis towards the sciences - and he also claims the support of most vice chancellors at the time. "In public they constantly criticized the cuts and so on, but privately their only criticism was that we hadn't gone far enough."

He is convinced that the public distaste for the intellectual life is rooted in the popular image of the 1960s - "excessive disillusionment following excessive euphoria." Not that there was anything intrinsically wrong with long hair, youthful flirtations with Maoism and demonstrations, but the too-rapid expansion led to a gross deterioration of quality of students and staff.

That has now undoubtedly been resolved, but some of the hostility unfortunately remains. Even in Cambridge, he observes, people remain sceptical of the university's role in the community. "And this is somewhere where the university has led to fantastic prosperity in the city. Nine years ago, the science park consisted of one building employing 400 people. Now it is 40 companies employing more than 1,600."

From his position behind the scenes, Mr Rhodes James now believes he can concentrate on issues which are beginning to make an impact on the public, such as the brain drain ("When a reporter in Fleet Street earns twice as much as a lecturer in plasma physics, we are in trouble") and liaison with industry.

"We need to keep posing the question, 'what is higher education for?', even though there may be many answers, and some of them might be very painful. You have to keep asking, but you can only do so in the context of a good atmosphere, not mutual suspicion. When Keith keeps talking of a 'privileged elite', I say 'No - you have taken away all the privileges'."

"Higher education should be a period of joy, of intellectual opening. You can't just keep talking about money."

Even when speaking of the last, turbulent 18 months, Mr Rhodes James manages to sound optimistic about the future. Politically, he believes the Westland affair represents a watershed, which will lead to more consensus in Cabinet and less slavish devotion to spending cuts.

Ironically, that surge of hope comes at a time when his Cambridge seat has been threatened by the announcement that Shirley Williams is to contest the constituency for the Alliance. The next election will surely see the PR men and accountants of the Social Democrat Party out in force, while Mr Rhodes James fights his characteristically good-humoured campaign.

In the last of our series on south-east Asia, C. W. Watson looks at the changes taking place in Indonesia

Islands on course for a new world of learning

Higher education in Indonesia is going through a much publicized and dramatic overhaul at the moment. For Indonesians themselves, the most visible aspects of this are the thousands of high school leavers, 512,000 this year, seeking 90,000 places in government establishments of tertiary education.

There has always been pressure on these places but the population profile of Indonesian (around 170 million) is such it has now reached staggering proportions and parents, even more acutely aware than in the past of the importance of a degree for the futures of their children, are heavily preoccupied by the question of how their children can obtain university entrance. For foreign institutions of higher learning, anxious to boost their revenues, the prospect of Indonesians looking overseas for the higher education which they have difficulty in obtaining at home offers a welcome potential source of income.

At the moment there are 43 state universities and teacher training colleges in Indonesia and 360 private establishments (but of the latter not more than about 20 are reckoned to be of an acceptably high standard). Of these the Government recognizes 10 universities as being centres of excellence, all except one located on the island of Java where 75 per cent of the population lives. This uneven distribution of the major institutions within the country has already aroused murmurs of dissatisfaction, and the Government has attempted to improve the quality of education in the outer provinces with an eye to improving regional infrastructures as much as to providing better educational opportunities. But it is generally felt that so far the improvements have not had much tangible impact.

The problem of improving the quality of higher education cannot be solved without taking into consideration the quality of education at secondary level. This has been made abundantly clear to the ministry of education ever since an attempt was made to introduce standard university entrance examinations in 1979. The idea then was to establish a new system, under which the 10 centres of excellence administered a joint entrance exam comprising a set of multiple choice question exams. A second route offered automatic places to selected candidates who had done well in their final two years of secondary school and the advantage of both systems was the attempt to control entrance according to meritocratic criteria and avoid the corruption and favouritism which had become so ingrained and which had marred the previous system.

The new system, however, threw up its own problems. In the first place the new exams could not be properly administered and the ministry of education was faced with thousands of students crammed together in one of the large sports stadiums in Jakarta trying to do the exams under near impossible conditions. Second, the multiple choice method of examination, designed to facilitate marking and processing by computer, led to ludicrous results.

This was particularly the case in language papers, English and Indonesian, where the exam questions for the most part did not test language competence, but the knowledge of obscure terms of syntax and literary criticism for which high school students were totally unprepared.

The other major drawback was that the new system still favoured wealthy candidates from the large towns of Java where private tuition facilities were available, and where

most of the better secondary schools were located.

To give the Government credit it has been responsive to many of the criticisms. This year some innovations were introduced into the system of examining, such as a national examination for secondary school leavers, but results were mixed. In general, the feeling among ministry officials is that, despite teething problems, this new examination is the right way forward, and it is hoped that it will eventually replace, at least in part, the need for the other exams.

After 1950 when the Dutch recognized the independence of Indonesia, the new republican government introduced an educational system copied from the Dutch. This meant that the university degree was split into two parts, a *Sarjana Muda* degree course lasting three years, followed by a two-year *Sarjana* course on the successful completion of which a graduate was awarded the title of *Doctorandus*. For all intents and purposes it was the *Sarjana* which was considered the terminal degree, which was necessary for advancement in the professions and the civil service.

Since exams could be regularly retaken and were sometimes postponed for arbitrary reasons, it was rare that anyone managed to obtain a degree before completing at least seven years of tertiary education.

Under the new system, undergraduate and postgraduate degrees are labelled S1, S2 and S3. The S1, now considered a terminal degree for all except those who wish to pursue academic careers, is a four-year intensive course. The S2 programme is a two-year course leading to a masters, and the S3 degree is a doctoral programme comprising course work and original research followed by the writing of a thesis. These innovations in the degree structure appear to have been a great success in terms of the numbers of qualified graduates who have been produced.

As well as reforming the structure of universities the Government has also set about streamlining the teacher training institutions. In the past these institutions awarded degrees in the same way as universities and indeed the best of them, those in Bandung, Jakarta and Malang for example, were considered on a par with the major universities.

The reforms, which took as their starting point the crying need for thousands of teachers to cope with the increasing demand for education from the rising numbers of school children, established teaching diploma courses adapted to the different needs of those who were destined to be primary or junior or senior high school teachers. Again this has been a welcome restructuring although there has been criticism that institutions which are now properly considered institutes of teacher training no longer attract the same high quality of school leavers as they did in the past.

Changing the structure of higher education is only a partial solution, and it was recognized that it would not be effective unless introduced in conjunction with other new measures in the fields of curriculum reform, provision of textbooks, and the reorganization of university administration. It is in these areas that the problems appear less tractable. In the last named, in particular, there has been considerable dissatisfaction, since often the ministry of education has interpreted the reorganization of university administration to mean more centralization and this has led to the loss of what little autonomy still remained.

Return of the magnificent seven

John Perlman looks at the fellowship scheme designed to bring women scientists and engineers back into the research fold

After five posts in the physics department at the University of Surrey fell vacant, and not a single woman applied for them, Professor Daphne Jackson, head of the department set out to find the answer.

Two years later, seven women scientists and engineers are returning to university after lengthy career breaks, with three years of advanced research in fields like information technology and physics ahead of them.

They are the first recipients of fellowships, funded by the private sector, which will enable them to carry out advanced research and compete for permanent academic posts.

"Women who have taken career breaks because of family commitments have the qualifications for top jobs, but they have lost touch with research," says Professor Jackson, presently Dean of Science at Surrey, and driving force behind the scheme. "That is where the biggest weakness in their CV lies."

In 1979, only 15 per cent of university lectureships in all disciplines were held by women, and the figures for science and engineering were lower. In 1983, women took 8 per cent of the first round of "new blood" posts - 3 per cent in engineering, 8 in physical science and none in information technology. Yet 86 women of "astonishingly high calibre" applied for the returners' fellowship scheme. Over half of them had PhDs, a further 15 per cent had masters' degrees and more than one-third had experience in industry.

"This represents a shocking waste of highly skilled people," says Professor Jackson, the first and still the only woman professor of physics in the UK. She points out that the age range for new blood candidates, 27-35, is the worst possible time for women with children. "We do need young people, but there should be another route for older women."

What is "new and necessary" about her fellowship scheme, which is open

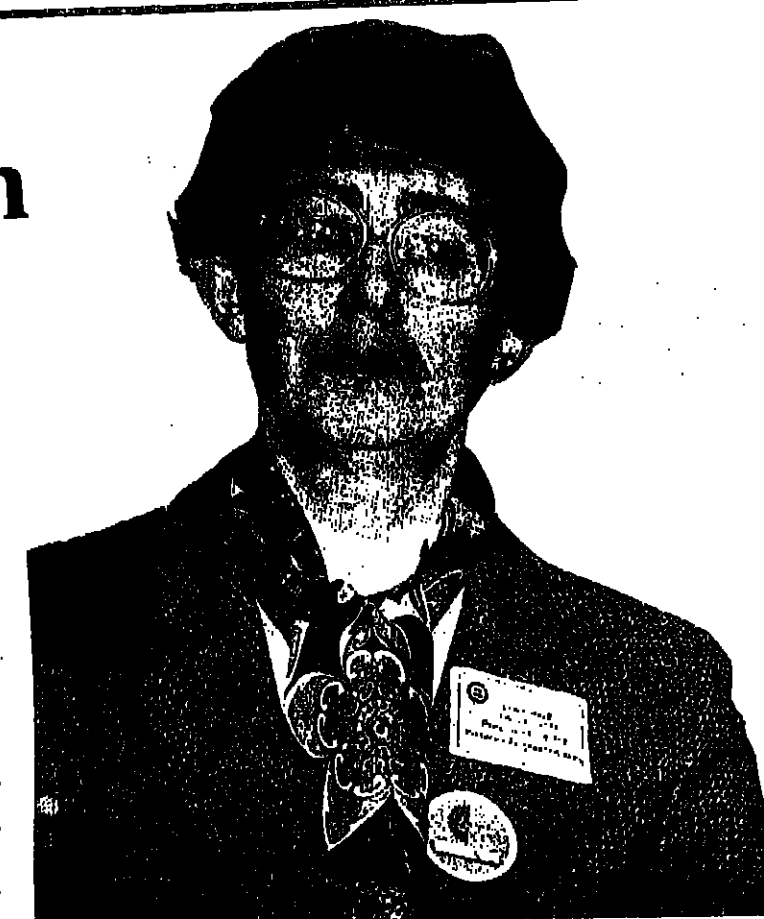
to women between 27 and 45, is that it gives returners from a career break the opportunity to do research. Professor Jackson says training and retraining courses offered by polytechnics and further education colleges, and by the Open University's women in technology scheme are a lifeline. "But you can't do research by post."

The fellows will be paid a part-time salary, while they receive training in recent research techniques, and then embark on a research project of their own. They may do a short course in teaching methods and act as tutors in the university. They will not register for higher degrees, but will be encouraged to complete the requirements for membership of professional institutions. "The intention is to be flexible, to fit the fellowship to the woman," says Professor Jackson.

Mrs Elizabeth Hogger had applied for a full-time research post at Surrey before she heard about the returners' scheme. Had she got it she would have faced the difficult task of accommodating a strong interest in expert computer systems, and the needs of her two children, aged four and 18 months.

"I had tried to get a part-time job in this field, but companies' interest diminished when I said 'three day week'. They are missing out on good people." Mrs Hogger has two degrees, research experience in computer control and experience as a programmer. She will be doing research into expert systems at Surrey, a field which "scarcely existed" when she left full-time study.

Dr Elizabeth Johnson graduated with a PhD in physics from the University of Manchester in 1961, then worked as a research assistant, an A level teacher, a temporary lecturer, a writer of journal abstracts, and latterly a supervisor of post-graduate research. "If you want to do research yourself, you have to be able to apply for contracts, to have a research programme, and have students work with



Professor Jackson: "A shocking waste of highly skilled people"

you," she says. "If you don't know whether you will be there the next year, it's hard to do that." Dr Johnson will be doing research into information technology in physics at Imperial College.

Women who have been awarded fellowships will not be the only people to benefit from the scheme. Professor Jackson has put some applicants in touch with university departments and two have got jobs as a result. She has given advice about retraining to people who trained in fields that no longer flourish, like particle physics and astronomy. "I have been operating as a one-person employment service," she says.

But what gratifies her most is that other women in similar positions are taking heart, and are starting to enquire about returns from career breaks for themselves. "The biggest problem we faced was making contact with women, many of whom have lost contact with their fields."

She believes the information and ideas gathered and the contacts made

as the scheme progresses will be of use to other women on career breaks and others, like companies who are trying to get them to return. The returners scheme could also strengthen other initiatives to involve women in engineering and science, particularly the women into science and engineering campaign in schools.

The Women's Engineering Society and others have said women academics are needed on courses where female students are in a small minority. Professor Jackson believes they can influence the teaching style and course content to make courses fairer and more interesting for women. "And it is nice for them to know they can talk to a woman," she says.

Professor Jackson hesitates to use the words "role model" - "I am not saying to women students they should be like me. But at least they can see it is possible for a woman to become a professor, to get through the system."

The Science and Engineering Research Council has modified its regulations and now explicitly allows part-

South Africa in crisis

Casualties of the state of emergency

by Christopher Forsyth

Only the most uncritical and isolated of South Africa's universities have escaped disruption since the state of emergency was declared on July 22 last year. The boycotting of lectures and disruption of examinations were mild symptoms of unrest. Worse was the campus violence as police and troops sought to break up protest meetings and students responded with stones and, sometimes, petrol bombs.

South Africa's 20 or so universities do not, of course, conform to a single pattern. There are the "better" universities, well-established English language universities in the major cities. They are autonomous in the sense that a majority of the members of their governing councils are not nominated by the government but are drawn from the staff of the university, its alumni or some other non-government bodies.

Traditionally these universities have been liberal. They have attempted to implement the principle that race should play no part in education policies. They have generally adopted admission policies in which all qualified candidates were admitted without regard to race. This has not always been lawful. In 1959, for instance, legislation was passed that denied these universities the right to admit black students save when the appropriate government minister had issued a permit.

In practical terms this restriction no longer exists. Although the government retains the power to impose racial quotas on universities by decree, such quotas have not been imposed, and in all faculties at the open universities there is now no legal restriction on the admission of students of any race. Nonetheless, most students at these universities are white although there are substantial black minorities.

All the open universities, viz the University of Witwatersrand, the University of Cape Town, the University of Natal and Rhodes University, are attempting to redress this imbalance by various schemes to ensure that students are not deprived of access to the university through lack of money (there is no system of student grants in South Africa) or because of their poor secondary schooling.

On the other hand students of the essentially white Afrikaans language universities are, by and large, conservative and uncritical of the present order and with notable exceptions so are their staff. From time to time there are signs in the student bodies of a burst of rebellion—such as the students from the University of Stellenbosch who recently met with representatives of the ANC in Zimbabwe.

These universities are autonomous, but they reflect the mores and values of the conservative white Afrikaans-speaking communities they serve. Although they could lawfully open their doors much wider to black students, as the open universities have done, the number of black students attending Afrikaans universities is very small indeed.

The strength of feeling against black students may be gauged by the defeat of referendums at the University of the Orange Free State and Potchefstroom University for Christian Higher Education on the admission of blacks. At the end of 1984 the students of the University of the Orange Free State were asked to vote whether blacks should be admitted under very stringent conditions: their numbers would not exceed 1 per cent of the white students, they would not be allowed into student residences, they would only be admitted if the course that they wished to study was not available at the universities designated for their own race group and in any event their admission would only be for a trial period.

None the less, the referendum was lost with 53 per cent of the students opposed to the admission of blacks even on these conditions. At the University of Potchefstroom in a similar referendum there was a 78 per cent majority against the admission of black undergraduates.

One might wonder where the Uni-

versity of Potchefstroom will find 100 black undergraduates who wish to study at the university in circumstances in which they are so plainly unwelcome. But once we glance at the universities especially established for the blacks this becomes less of a puzzle. The crucial point about the "black", ethnic, or "bush" colleges is that they are not autonomous. The majority of their governing bodies consists of nominees in one form or another of the South African government.

The establishment of these institutions is an integral part of the apartheid scheme. Blacks were to be denied access to the open universities but they could be educated separately at their "own" institutions. The University of Fort Hare is the premier bush college, chiefly because it has a history and a legitimacy that antedates apartheid. It was founded in 1916 as the University College of Fort Hare and was an important tertiary educational institution for many years drawing students from all Africa. It numbers Nelson Mandela, Gatsha Buthezi and Robert Mugabe among its alumni. In 1959, however, at the same time as racial exclusion was being imposed upon open universities, legislation stripped Fort Hare of its autonomy and it too became little more than a tool of the South African government.

Although considerable capital sums have been spent on the development of these universities by the South African government so they often have grand modern buildings and other facilities, these universities face a fundamental problem: the vast political gulf that inevitably separates the university and its administration from its students.

The students are frequently the best educated and most politically aware group in the black population. Inevitably, therefore, they are radically opposed to the South African government and the very existence of the university at which they are students. Their only form of non-violent political expression is to boycott lectures and this is frequently resorted to. Almost invariably the university responds in a forceful, highhanded and oppressive way.

At Fort Hare in 1982, a student boycott of lectures was met with an ultimatum issued at 5pm one evening that students who did not return to classes before 8am would be deemed to have discontinued their studies. The next morning the campus was flooded with police armed with sub-machine guns and whips. Students who continued to boycott or who were too timid to brave the ranks of police and remained in their rooms were rounded up, sometimes at gunpoint, put on to trucks and transported off the campus before the day was out.

A major effect of the emergency on the open universities has been to draw them more explicitly into confrontation with the government. These universities, especially the University of the Witwatersrand and the University of Cape Town, have long records of opposing the intrusion of apartheid into universities. But this struggle between the open universities and the government was largely affected by matters which directly affected the universities. Now they find that the present unrest and crisis is such that the universities cannot stay separate and silent about it. Here is part of the University of the Witwatersrand's policy statement made in December:

"Today we witness the consequences of apartheid, a policy that has brought about not just restrictions upon freedom of movement, but the forced removal and resettlement of whole populations; not just the restriction of freedom of expression, but the banning of books, organizations and people; not just infringements of personal liberty, but detention without trial and even torture; not just denial of political liberties, but the exclusion, on the ground of race, of people from their common and effective democratic rights. The outcome is the current tragedy: shootings and lynchings, intimidation, looting, the boycott and destruction of schools and the consequences of the cry 'liberation before education', the shooting of men,

The University of Cape Town attempts to reduce the police presence and avoid scenes of violence (opposite)



women and even children, the use of excessive force by those seeking to maintain order, indemnity for agents of the state who do wrong and further restrictions on rights and liberties.

"This entire scene bears grim testimony to the fruits of the policy of apartheid and of the need for rapid and sweeping change. Universities generally have hitherto tended to take an official position only on matters that bear directly and narrowly upon their nature and function. The University of the Witwatersrand has a record of resistance to academic apartheid and to the denial of civil liberties. Its deep concern over the present impasse in the affairs of our land demands that it now speak out on the broader issues that affect South Africa as a whole. Not only is it morally obliged to protest at gross injustice, but a failure to speak at this time could wrongly be taken to imply tacit acquiescence in an outrageous state of affairs."

The response of the University of Cape Town has been similar. This shift in the nature of the universities' criticism of the government is hardly likely to have much effect on government policies in South Africa although it may leave government more hostile to the universities. The liberal universities have not had the ear of government for many years. Rather it is simply a reflection of the anguish felt within these essentially liberal institutions at the turmoil and suffering in the lives of many as well as the policy as a whole wrought by the present unrest.

A determined, ruthless police force

The controversy over the archaeological conference at Southampton has raised again a question which white South Africans, incensed at international criticism, persistently ask: "Why pick on us?"

"True," some will admit, "there is grave injustice and inequality in our society, but there is worse elsewhere, and, unlike others we are trying to do something about it. Why not give equal attention to the brutality in Uganda, the inequality in India, the corruption in Nigeria, and the poverty in Bangladesh? Why pick on us?"

To answer their question South Africa is set apart on five counts. First it is unique in the way it uses legislation based on race to create and preserve divisions among its people. The discriminatory framework is comprehensive—covering such matters as where people may live, what school they may attend, and what jobs they may do—and it denies political rights to the black majority. Discrimination is applied with great determination by a large bureaucracy and a ruthless police force. There is no escaping from it because the individual carries the badge of race with him in the colour of his skin. That cannot be changed. Second, racial discrimination has

been perceived in the international community as an offence against cosmopolitan justice (ie it is a matter of concern for all mankind). Radicals take that further in seeing South Africa as a part of the struggle of the oppressed against capitalist exploitation. Thus, in South Africa's case, race and class become merged into a commitment to a new order and a new justice. This radical dimension, when married to Western concerns about individual rights, explains why the condemnation of apartheid is so broadly based.

While the West emphasizes the individual, the black and communist states pay greater attention to structural injustice—to the way in which society is organized to deny rights to a race and/or a class. In the South African case the offence is both to the individual (which infringes Western values) and to the blacks collectively (which infringes black and communist values). The result has been an international crusade against racism in general and South Africa in particular. Although within the crusade there is much hypocrisy and "holier than thou" posturing, strength and breadth has made the fight against racism one of the great causes of our time.

The fourth factor is what Heidegger called "the vagaries of international politics". In other states in which individual and group rights have been infringed the political setting has been different. For example, when atrocities have been reported from Uganda there have been no United Nations members or power-

of its students—was built from scratch in the mid-1960s on the black inhospitable "Cape flats" outside Cape Town. This was where most of the coloured population had been driven after being ejected by the Group Areas Act from their traditional homes in the centre and in the established suburbs of Cape Town. Dissent has frequently been repressed by the police since and in 1985 there was a long boycott of classes and frequent disruption of protests, demonstrations and concertant violence.

Although this presents a picture of serious disruption, the image of UWC is in the process of changing. The students are just as radical as those, for instance, at the University of Fort Hare, but there is a distinct difference in their relationship with the administration of the university. The principal, Dr Richard van der Ross (the first coloured rector) had a career in moderate coloured politics stretching back to before the commencement of the apartheid era in 1948. He was involved in the opposition to the removal of coloureds from the common voters' roll in the 1950s. His opposition to apartheid is unqualified and determined. It was surprising that so obvious an opponent of apartheid should be offered the rectorship in 1975 and even more surprising that he should accept it. But he did and that has had considerable consequences for UWC.

But if UWC was born as the child of apartheid, rejected and despised by the coloureds, this has changed during the tenure of Van der Ross. The university now has a substantial proportion of coloured staff, a much larger number of students, far better facilities and buildings than in 1975 but, most important of all, the credibility of the institution among students and the coloured community generally has been established.

At UWC, unlike most of the other bush colleges, the politically aware students do not see the university as an inevitable enemy to be fought at every juncture. This does not mean that the student body is placid and untroubled. Far from it. UWC saw some of its most serious disruption at universities during the past traumatic year. So much so that the examinations that were due to be written in November 1984 were postponed to early January 1986. And even then, at the examination in January, 150 students broke into the examination room and prevented it from continuing. In order to do so they chased away 400 armed and equipped security guards employed by the university.

This in itself is significant: most of the other bush colleges do not hesitate to call the hated police on to the campus. Almost inevitably this inflames the passions of the students and makes the position worse. UWC at least tries to keep order itself. While the examinations were being disrupted a mass meeting of 2,000 students voted overwhelmingly that the examination should be postponed until January 20. Again faced with such a student demand many bush college administrations would have dismissed it cursily.

but UWC acceded. This difference is likely to grow as the new rector-designate Professor James Gerwel takes over. He is due to take up his position at the end of 1986 but may well do so earlier. Gerwel is a man likely to build up even more rapport with the student body. One of 10 children of a farm labourer in the Karoo was one of the first students at UWC in 1965. He took his first degrees there and went on to the Vrije Universiteit in Brussels where he wrote a doctorate on apartheid and literature. He returned to South Africa and in due course took the chair of Afrikaans at UWC.

His attitude to his task is very different from that of the typical bush college rector, as this extract from a speech made in August shows: "I do not wish to spend emotional and intellectual energy arguing the fact of our society being in transition or the nature and length of that transition period. What seems to my observation to be beyond argument is that the settler-colonial dominated social order (in its latter stages manifested as apartheid) faces its terminal crisis. We could as an educational establishment either be an opponent of our society or a facilitating agent for it while at the same time retaining what is essential to our definition of university."

"I suggest that we (ie UWC) have the best chance of all South African universities of being the latter if we are prepared to make the decision now. Our primary constituency—our students—provide us with that opportunity if we are prepared to see their current interpretation of 'studenthood' as a positive sign of rationalism and enlightenment on our academic task. They represent in their admittedly intellectually 'immature' way South Africa in the making rather than South Africa being destroyed."

This willingness to heed rather than oppress student opinion is reflected in a number of aspects of the UWC. While the University of Fort Hare is struggling to set up a students' representative council that will not immediately become a platform for the students' radical and, to the administration, unpalatable political views, there is a functioning SRC at UWC. Moreover, students sit on faculty councils and participate in many ways in the running of the university. Gerwel says: "I think that UWC has a unique position. It is a place where we must not be quick to judge the law and order 'drum'. You may think that you solve a problem by forceful action and that may be true in the short term, but in the long term you simply make the problems worse."

This is recognized in the approach of a new American initiative. Representatives of most of the major United States universities committed themselves in October 1985 to "long term partnerships with South African universities and organizations that share a dedication to a non-racial, democratic society in South Africa." The presidents of Harvard, Yale, Princeton, MIT, Stanford, Cornell among

others signed this commitment, the precise fruits of which are as yet unclear but exchange programmes, students and staff as well as funds to take up his position at the end of 1986 but may well do so earlier. Gerwel is a man likely to build up even more rapport with the student body.

The meeting in New York at which the American universities made this commitment was addressed by both the principal of UWC and the rector designate of UWC and naturally both these universities expect to benefit greatly from this development. To qualify for such aid the universities are likely to have to commit themselves publicly to a statement calling for a non-racial democratic South Africa, non-discrimination on racial grounds in the selection of students and the appointment of staff and calling for the lifting of the state of emergency and the "rapid and unambiguous introduction of reforms."

When this initiative is set against the brouhaha surrounding the banning of South African academics from attending the World Archaeological Congress it is not difficult to judge which action is more likely to facilitate the emergence of the new "South Africa in the making" at those universities at which the struggle to end apartheid is being waged.

The author is a fellow of Robinson College, Cambridge.

Britain's legacy and the drift into chaos

by Bruce Collins

Britain of all countries has the closest links with modern South Africa, links established not simply by contemporary moral awareness but by 19th-century intervention. From 1806 to 1910 Britain directly ruled some, then much, and eventually all, of present-day South Africa; and British government eventually created the Union of 1910. Historical responsibility, as well as moral and humanitarian concern, therefore associate this country more than any other with South Africa's subsequent misfortunes.

Global strategy brought the British to the Dutch Cape Colony. It was occupied first in 1795-1803, and following a period of Anglo-French peace, from 1806 onwards, in order to prevent the French capturing so important a base and replenishment point on the route to India. Acquisition was formally confirmed in 1815.

Britain's first four decades of rule after 1806 coincided with a major upheaval among the indigenous peoples of Southern Africa, but it was also British policy towards these peoples that ultimately contributed to the northwards trek of 6,000 Dutch settlers in 1835-48. The upheaval, known as the *Mfecane*, springing from economic and demographic pressures, occurred beyond the sphere of British control and led to the emergence of



nearly a dozen alliances or tribal kingdoms by the 1830s.

These were widely distributed geographically in a vast region stretching as far north as the Limpopo; they enjoyed varying degrees of political and military centralization and co-ordination, belonged to different linguistic groups and generally distrusted each other. They also blocked advancing white settlement, leaving open only the route across the middle Orange River and on to the Highveld. Several of these kingdoms, notably the Xhosa, Zulu, Swazi and Pedi, came to possess considerable warfare power by the 1830s. By the 1880s their military effectiveness had largely been neutralized; but it was the British, not the Boers, who were primarily responsible.

The Xhosa first felt the British impact, though initially but lightly. Living along the eastern Cape frontier, they shared the white settlers' preoccupation with cattle raising and raiding. Excessive capacity and unacceptable violence periodically provoked wars. The so-called Fourth Kaffir War (of 1811-12) introduced British troops for the first time into these conflicts, which were typically brief and without notable battles.

The fiercest of these, in 1850-52, resulted in the deaths of thousands of Xhosa warriors and the loss of perhaps as many as 80,000 head of cattle. Although a purely internal crisis among the Xhosa finally debilitated the nation in 1856-57, mortal blows had already been dealt to Xhosa society by the declaration of a British protectorate over part of its territories in 1847 and the warfare of 1850-52.

For the first half of the 19th century the Xhosa had formed a sort of human Magnat Line blocking white advance in the eastern Cape. Farther north, the Zulus emerged in the first two decades of the century as the southern African exponents of blitzkrieg, possessing disciplined regiments and well-heard battlefield tactics that permitted bold advances and swift movements. Although the Boers stopped Zulu expansionism in 1838—at Blood River on December 16—the British delivered the final blows to the Zulu kingdom between 1879 and 1884.

A recent objection has been that historians' preoccupation with single decisive battles has led to a false explanation of Zulu collapse: the real undermining of the Zulus came not in 1879 with the destruction of the royal capital at Ulundi, but in 1883-84 under the simultaneous pressures of civil war and of a rapidly growing demand for wage labour that warped pastoral economy and peasant life-style alike.

It may indeed be simplistic to identify Zulu decline with the defeat at Ulundi; nevertheless, the civil war and the spread of wage labour which ultimately destroyed the Zulu social system both arose from the dismemberment of the kingdom ordered by General Wolseley following Cetshwayo's defeat in 1879.

The fighting itself gravely taxed Zulu resources. Isandhlwana is today recalled as a disastrous British defeat, but Zulu losses in achieving that victory were even heavier (858 British and approximately 2,000 Zulus killed). The defence of Rorke's Drift is immortalized, (if only in the persons of Michael Caine and Stanley Baker) as a heroic and ultimately successful British struggle against overwhelming odds, but the Zulus were forced to disengage by empty bellies as much as by enemy bullets.

The unusually large British force required in 1879 to defeat the Zulus were drawn upon subsequently to subjugate the Pedi of the eastern Transvaal. The British had annexed the Boer republics in 1877. They now undertook a military operation, storming and capturing the formerly impregnable Pedi stronghold at Maseru in November 1879. This would have been far beyond the financial resources and military capabilities of the impoverished Transvaal government.

Even when, in Britain, the Liberal government of 1880-85 reigned in what it regarded as costly adventurism in South Africa, occasional, locally significant demonstrations of military power were still to be seen. By the 1890s, the British, who had obtained a mere slice of South Africa in 1806, had violated African military power south of the Limpopo, and although the potential for revolt remained, it was seldom realized. How was this done?

London rarely planned a forward policy for South Africa. Of Colonial Secretaries, only Lord Carnarvon (1874-78) and Joseph Chamberlain (1895-1902) formulated a policy of confederation and were prepared to implement it by force. Governors on the spot sometimes pressed for expansion. Sir Benjamin D'Urban (1834-38) had his acquisitions on the Xhosa frontier disowned by the Colonial Office, and Sir Henry Smith (1847-52) was eventually recalled owing to the escalating costs of frontier warfare. Sir Bartle Frere (1877-80) asserted that no peace should prevail in southern Africa while "the caprice of an ignorant and bloodthirsty despot" (Cetshwayo) commanded "an organized force of at least 40,000 armed men", and it was Frere who orchestrated the policy leading to war.

Once the British decided to act against African armies, however, they assembled far more troops than the Boers could either find or finance. Though Parliament objected to rackless spending, imperial troops could always be counted on in emergencies, to maintain British interests.

Once raised, imperial forces were deployed with vigour. Lord Chelmsford, commanding in Natal, said in 1878 of the Zulus: "Half measures do not answer with natives. They must be thoroughly crushed to make them believe in our superiority." General Wolseley in 1879 wrote thus of the Pedi King: "My object is to strike terror into the hearts of the surrounding tribes by

the utter destruction of Sikukuni, root and branch." The forces available in the 1870s to implement these purposes were substantial, as a result of Carnarvon's scheme to confederate all South Africa. But even in quieter periods the significance of the British force in South Africa was considerable, given its comparatively high level of training, organization and equipment.

Even more importantly, these regulars formed the nucleus of more motley forces. Today the sight of blacks prominently deployed in the South African security forces is becoming familiar; it would not have seemed unusual to observers in the Cape in the 19th century. The force of 2,000 men serving in the frontier war of 1811-12 included, as well as British regulars, Hottentots and 800 burghers organized into small commandos. For the invasion of the Xhosa lands in 1835 Governor D'Urban collected about 3,000 men, of whom half were burghers and a quarter Hottentots.

Modern studies often emphasize social and economic developments at the expense of the impact of military force. Sometimes this leads to an appearance of continuity: the displacement of kings, chiefs and establishments merely rippled the surface of African society.

But the most dramatic economic change occurred in the Transvaal after the mid-1880s and the discovery of gold. Raised from rural backwater to mineral megastar within a decade, the Transvaal attracted in the mid-1890s an army of British interests. Chamberlain as Colonial Secretary from 1895 sought to galvanize empire sentiment and saw the cause of South African confederation under British direction as a suitably appealing one. Global strategists felt that safeguarding the Cape's security and British economic interests alike depended on strengthening the white polity of South Africa and preventing the Transvaal from deepening its own relationship with Germany. Anglo-Boer tensions mounted and in 1899 the republics went to war with Britain.

The Boers lost the war, but in 1902-10 British efforts to anglicize the republics, through education, immigration and improvement, failed in the face of Afrikaner political unity. The Union of 1910 fell to Boer control. Many liberals have since seen the erosion of a strong central government, instead of a genuinely federal structure, as the gravest legacy of the new constitution. The irony was that the British had spent so much energy and effort in the preceding 100 years in shaping a viable, cohesive and enlarged polity in South Africa—without, of course, working to any overall consistent plan. Almost at the last moment, the Boers took over the driving seat of the vehicle of power that the Union.

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Beauty and Le Boeuf - a passing glimpse of Paris

Le Petit Suisse is a *café-jabac* on the corner of the rue de Racine and the rue de Médicis. Situated alongside the *théâtre de l'Odéon*, it would suddenly fill up a little after midnight with strikingly beautiful and languorous actresses, spoke French very loudly and with carefully spaced stress. They would all leave together, in a cluster of finely accented farewells. Their dramatic collective departure a little after one in the morning would be the usual signal for the *burlesque*, a stocky *Havrais* with very blue eyes and a very red face - he started on the calvados with his early morning *pousse-café* at 7am and sustained himself on a *à petits gorgées*, dipping in lumps of sugar, for the next 18 hours - to start pulling down the steel shutters.

Certainly the high spot of the evening would be the noisy collective incursion of the lovely actresses. Before their arrival, the place was very quiet; a few discreet couples half-hidden by potted plants, and, at its usual table, in the far corner, away from the double-facing windows, *Le Boeuf* - known to all the regulars as I suppose, to himself as such - sat very still, ruminating and playing with the bowl of his pipe, and breathing so heavily that the small table before him shook, waiting patiently for an opportunity to break into the conversation if given the slightest chance.

Le Boeuf was a heavy, massively thick-set man with a huge head, a mass of dark curly hair, and liquid brown eyes that had startlingly bulging whites. The liquidity of the eyes may have owed something to the succession of *petits blancs secs*, the piled up saucers of which would give a rough indication of the level of consumption between his arrival at about 9pm and the present state of play at about 11.

Le Boeuf was part of the furniture. His presence throughout the week, save Tuesday, when the café closed and the Havrais went off to play cards with fellow Normans in a brasserie adjoining the Gare Saint-Lazare, and on Sundays, offered the comforting reassurance of visible continuity. He always greeted Hélène and myself with elaborate courtesy, *très Vierge France*, 11. He was a retired bellman from the *Opéra Comique* who had reached his operative heights through Bize. He was a Basque - I think his real name was M. Eschavarry, or that is what it sounded like - who had begun his operatic career in the *Comédie*, just off *le Capthole*, in Toulouse.

He was a widower and lived in a flat at the top of the rue de Tournon at the point at which that handsome street turned out as it approached the Sénat. His flat, once gathered, offered a plunging view on *le Tournon* opposite. *Le Boeuf* had appointed himself, at some earlier stage, the ever-observant historian of this quiet part of the Vème.

As his vis-à-vis, *Le Tournon*, had been the principal evening and late-night rendezvous of *Ces MM de la Lufiwaffe*, stationed in the Luxembourg at the top, and their chosen female escorts between 1940 and 1944, there had been quite a lot to observe. He had not just used his eyes, which indeed looked rather like flash bulbs attuned to night shots; he had also, from his high perch, made frequent use of his small camera, not in any clear spirit of historical research, but in order to satisfy his own apparently limitless curiosity about what went on in the Quartier. When he got to know us, he would hand over to our table for our scrutiny and information a series of photographs that he had taken in August, 1945, at the time of the

Liberation. There was one of the *patronne* of *Le Tournon*, her head shaved and completely naked, - one could see her public hair black against her very white body - being promenade up the street by a group of helmeted FFI. Madame Adhemar - that was her name - had since regrown her hair and recovered her clothes and had returned to her throne behind the tobacco counter in *Le Tournon*.

Not that *Le Boeuf* was in the least bit censorious of the Occupation activities - some of them apparently horizontal - of *la patronne* opposite. He claimed at some length (he spoke with slow, measured majesty, his Pyrenean accent vibrating like a church organ) and considerable repetition, that, in a long life - no more than that, he was discreet about his actual age - he had seen too much ever to sit in judgement on his fellows.

He explained that, as he was above the street, he was also above that sort of thing. He could take a long view of things, everything was relative, politics did not interest him, though, when he was alone with us, he was given to expressing, in pontifical tones, *orbe et urbe*, pronouncedly right-wing views. He thought young *Le Pen* a fine fellow, a true Frenchman. He had it in for Protestants and Freemasons and the English (he was not aware of my nationality and I let him believe that I was Belgian, in the interest of the social harmony of the late evening).

He was in fact perfectly harmless, very lonely, and desperately anxious to engage in conversation. We soon became his appointed captive audience; he would revive visibly from a bovine torpor at our arrival, and we were offered the double-edged privilege of a monopoly of his words of wisdom.

At 11 in the evening, he would bridle suddenly - his huge face would fill with smiling anger. This was the moment of the arrival, every evening, of a dismal-looking, dispirited man with a small eye and an expression of utmost melancholy and despair in the other, in the uniform of *L'Armée du Salut*. The *salutiste* distributed evenly right round the room verbal vomit in a strong monotone - which drew out and out the *As. La Bible, la vie à venir, l'azur la Bible*, without much conviction, in a tone of hopelessness, followed, more threateningly, and on a dying fall: *JEUNESSE PAAAAAASSSE*. As the *tabac* would be then filling up with young couples - I was myself in my mid-thirties, Hélène, in her late-twenties - we might have seemed included in such general warnings of doom and decay. He distributed at the same time, and with an air of infinite distaste, as if he had been handing pornography - little paperback Bibles in bright picture covers, printed in Nîmes, to anyone prepared to buy them. I ended up in possession of about 25 of them, thinking I might cheer the poor fellow by purchasing his wares. But he would still look as dejected as ever through his single eye. It was amazing the depths of woe he could get into PAAAAAASSSE.

One evening when we got there at our usual time, we found that *Le Boeuf*'s table was empty. And at 11, *La Bible* failed to turn up with his dismal *Cris de Paris* and his black *cabas* full of the little books. We were told by the Havrais that the opera-singer had died of an embolus; one should have seen it coming in that apple-pie face. *La Bible* never appeared again. At one sweep we had lost our local chronicler, our 20th-century Resil, and our waddy blue-uniformed Parisian Job. *Le tabac* was never quite the same, the life had gone out of *Le Petit Suisse*.

Traditionally, universities got their money by paying for it. If they did not say masses for the dead relatives of their benefactors, they nonetheless studied to the glory of God and in memory of whosoever it might be that wool, land, or pillage wanted remembered. The tradition is not dead, though today's benefactors are more concerned with their own good name than with the honour of the departed. Tobacco money may be rejected, but without grants from some of the more acceptable faces of both capitalism and state socialism, several universities would be a lot poorer.

Grants and gifts though, whether for the memory of the deceased or the public relations of the living, are a passive kind of thing, and in depending upon them universities are depending on the vanity or public spirit of others. Universities are realizing that mutual self-interest can be as powerful as altruism, and that higher education has things to sell, and buyers who want to purchase. Like the stately homes, the ivory towers are opening up to the public. Money is increasingly being earned by universities and colleges and by their staffs in all kinds of ways which are based more or less directly on the academic work which they do.

There is of course nothing new in this. When Sir Peter Swinnerton-Dyer, in the steps of his illustrious namesake and in pursuit of his own Amritsar strategy for the universities, suggested that it was ludicrous that the professor, as a professor of business studies, he was making an astute point. The business studies don't have always had all kinds of opportunities for contracts, consultancies, and advisory fees which make it unnecessary for him to be paid nearly as much as the theologian.

Universities have come a very long way from the ignorance or indifference with which they once regarded the money-making activities of their members. They began by legitimizing them by demanding permission. Today universities and polytechnics recognize that the prestige of the institution benefits at least as much as the pockets of its members, and are actively involved in schemes such as BEST, the computerized register of British expertise in Science and Technology, which serves as an electronic clearing house where those who want to employ a particular skill can find the name and university address of its possessor. Now, and increasingly, universities are both marketing and developing those skills for the material benefit of the institution as a whole. City University has established a Bureau for Industrial Enterprise; Leeds has appointed a commercial manager.

Universities are today engaged in consultancy and contract publishing, manufacture, the provision of courses sold on the open market, of holidays and out of term accommodation, retailing, and the licensing of others to manufacture and sell products which they have themselves developed. They test or monitor the products of everyone from drug companies to deep sea divers, and carry out contracts research for every kind of industry.

They do this directly, or through companies which they have themselves set up and which they own, or through the traditional departments which exist for the non-traditional purpose of making money. Bradford University Research Ltd and its associated companies publish books, and do so at a profit, and manufacture and sell medical equipment and graphics software; they have customers from industrialists in Japan to NASA in America. Swansea University's Tribology Centre develops, manufactures and sells equipment to detect and prevent breakdown in other equipment; Manchester University's YUMAM develops and sells its own computer software, while an associated company develops and sells visual systems for robots.

The growth of the university as capitalist and entrepreneur has been both gradual and extensive. While it has been frequently commented on within the context of the substantial contribution which further and higher education make to innovation in industry, some of the problems and principles which are raised when the university is not just a provider of knowledge, but a direct financial investor in its commercial use have been treated with extreme caution as a "grey area". They have been noticed and solved as they occur, but little considered in terms of their wider consequences for the direction of higher education.

When a university teacher wrote a book, even if it was based on or indistinguishable from his or her lecture notes, it was a commercial transaction, all the profits that did not go to publishers or booksellers went to that person. What happens when a technological advance made in a university workshop, or a computer programme written as part of an academic's normal work, is marketed by the university or by one of its subsidiaries? The university just wants to profit, but in general want to give something to the individual who made the advance in the first place.

If the development has occurred in the university's own commercial company, then the solution may be that the university gets the fees and the teachers who put on the course get an honorarium. If what is being marketed originated in a department of chemical engineering, then the additional reward may be made in the form of a consultancy.



Ivory towers open to the public

Rodney Barker looks at the success of university capitalism

because it is interesting or important, but because it can be sold. They are not of course mutually exclusive. Several institutions have found themselves, without quite knowing how they got there, serving the equivalent of cream teas rather than getting on with their proper business. Occasional on to attract students, and dentists, at a time when funding for higher education is grossly inadequate, or lead to an overbalance of cheap books over brains.

It is no accident that this *heraldic* fact happened. Not only have the earned outside been fed back into the universities to fund research and teaching both in the earning departments and more widely, but valuable advances in knowledge have been made in the course of commercially applying knowledge. The enthusiasm for innovation and the pursuit of the interesting rather than the immediately and obviously profitable which characterizes university research, has been fed into public and private industry, to the benefit of all parties. Some inquiry has been both rewarded with application and funded with profit, while manufacturing gains from innovations which it itself may well have been incapable of making.

But because the success of university capitalism is no accident, it is worth asking why. How is it that things done in universities which are valuable to industry and for which industry is willing to pay, and yet are not done outside, even by those apparently need the advances in knowledge and technique. How is it that the university's research still comes up with the advances which the commercial world does not seem to produce? The ideology of the present government would lead us to expect precisely the opposite. It is universities who are supposed to have so much to offer from the "management" skills of the industry. But there are ways and means of managing things, and it appears that the way in which universities do their business, but for the purposes of the exacting world of commerce as well as the Jarratt committee should have been discovering what industry could learn from universities, rather than the other way round.

So the next time the university is lectured on the need for greater managerial skills, they should ask, and with some irritation, which kind of managerial skills the speaker has in mind, and whether the test of the efficiency of managing things is not, however one-sided and poorly expressed, of a viewpoint which has

hitherto been inadequately presented to world opinion on a highly emotive and controversial subject. The growth of national feeling among the Armenians of the Ottoman Empire, the unrest which this produced from the 1890s onwards and its often savage repression, the mass deportations of 1915-16 and the vast loss of life arising from them, and the pathetic attempt after 1918 to create a Republic of Armenia in eastern Anatolia: all this adds up to one of the great tragic dramas of modern history. The purpose of Mr Gürün, a former Turkish diplomat, is to state the Turkish case and to justify the treatment meted out to this suspect and finally hated minority.

The first three chapters, which cover the period down to the Berlin Congress of 1878, are badly written and full of errors and inaccuracies. The two which follow, on the years from the 1880s to 1918, are the real core of the book, and it is a pity that Mr Gürün did not devote more of his space to the events of this period at the expense of the often incoherent earlier part of it. Some valid points are made in defence

of the formation of concepts cannot be understood as a purely "mental" abstraction from passively experienced sensations, but is a function of our bodily activities of which work is the methodical form. On the other hand she very early on diagnosed this separation as the essence of the social oppression characteristic of modern industrial society with its division between "workers" and "managers". She followed out the practical implications of these ideas in her own life with the utmost consistency and courage. As a student and then as a teacher she was already deeply involved in working-class politics - much to the dismay of the French educational bureaucracy. Subsequently - and in spite of her evident physical unfitness for such a role - she worked in factories, including spells as a power-press operator in an electrical factory and on the production line at the Renault works. In 1936 she joined a group of Catalan anarchists fighting in the Spanish Civil War. Later, in spite of the increasing fragility of her health, she worked long hours in the fields as an agricultural worker, experiences which bore remarkable fruit in her writings: for instance in her late striking reflections on the religious symbolism of agricultural labour and the possibilities of finding something comparable in industrial production.

Some time after the defeat of France by Germany she contrived to join De Gaulle's Free French in London (making a hazardous and harrowing journey from Marseilles via New York and writing profusely and well all the time in the most adverse conditions). In London the collapse of her health, no doubt hastened by her refusal to eat more than the minimum rations allotted to workers in occupied France, led to her death in a sanatorium in Ashford, Kent. The precise circumstances of her death are in many ways obscure, but the spirit in which she approached her end is movingly reminiscent of descriptions of the reputed rite of *endura* ascribed to the Cathars, about whose manner of life and savage suppression by an unyielding alliance of the Catholic church and the French Crown she had earlier written so marvelously.

The publication of this new anthology of Siân Miles by such a firm as Virago should give a major boost to the British public's interest in Simone Weil's work. For this one must be grateful. It is a volume which contains some wonderful pieces which will now reach many more readers than hitherto. The editor's introduction too contains a valuable compressed biography of Simone Weil providing much interesting detail combined with sensitivity to the shape of her life.

But one's gratitude, unfortunately, has to be qualified. The claims made for the anthology by Sara Maitland in the blurb can hardly be sustained: "In this book we can meet a broader, more interesting and far more human Simone Weil than her previous spiritualizing editors have allowed us." Leaving aside the banality of this characterization

of Simone Weil's peculiar gifts ("clever" forsooth), what are the grounds for saying this? Most of the contents of this anthology have already been published in English translation: for instance the essays on "Human Personality", "The Iliad, or the Poem of Force", "Draft for a Statement of Human Obligations" and "The Power of Words"; and the extracts from *Gravity and Grace*, *Oppression and Liberty* and *Waiting on God*. The only new piece is a translation by Siân Miles of an extract from *La condition ouvrière*.

Pioneering collections like those of Richard Rees (to which this volume is heavily indebted) certainly do not deserve Sara Maitland's belittling characterization. And, as far as anthologies go, George A. Panichas's *The Simone Weil Reader*, published in 1977 by David McKay, New York, contains most of the material on offer here and much more, and is far superior in its representation of the scope of Simone Weil's interests. The Virago collection is considerably more attractively produced and accessible and it is well worth having for those reasons. But at this stage in the reception of her work in this country the question must arise whether this is enough. Were there not opportunities to be seized to make a more positive contribution to the understanding of her thought?

Most obviously, there was the opportunity to publish translations of some of the major essays which are still unavailable: such as "Essai sur la notion de lecture", "L'attitude du gouverneur provisoire". There was also an opportunity to present a selection of the writings in an order which would have displayed both some of the interconnections between Simone Weil's lead-

ing ideas and, above all, some picture of the way in which her thought about certain matters changed and developed. This latter is not of mere historical interest, since to understand the route by which she arrived at her mature positions is to understand something of what those positions amount to in themselves.

For example, three pivotal pieces printed here are (in this order) "Human Personality", "The Needs of the Soul" and "Analysis of Oppression". These all concern the relation of oppression to justice; but the last of them is a very early work, the other two very late. Between them Simone Weil's conception of what oppression consisted in had changed very radically. Whereas, in the early piece, she had based it on a conception of human nature which placed free individual self-determination at the centre, "Human Personality" makes a certain relation of the individual to the good fundamental: a relation which is spelled out in terms of a plurality of often mutually antithetical "needs of the soul" in the extract from *The Need for Roots*. The distance between this conception and the earlier one is highlighted by the fact that although *liberty* is indeed included as one of the needs, it is juxtaposed to the need for *obedience*. There is a long story behind that change: of a struggle with the inadequacies of the conception of human nature which Simone Weil had inherited from Descartes. But this struggle, along with much else that could have been displayed to view, is obscured by the selection and ordering of this anthology. Siân Miles does, in her introduction, give a chronology of the topics to which Simone Weil addressed herself in the course of her life, but here too there is little sense of the

fundamental changes (or, a fortiori, of the reasons for those changes) in her conception of the problems. One element in Simone Weil's development is the deepening of her conception of geometry as a model for the study of human life and society. It is a model which provides much of the structure for her wonderful essay on *The Iliad*. In order to appreciate the significance this model had for her, however, we need to know something of what she wrote about geometry itself. The introduction does quote an early letter explaining her method of teaching science to her lycée pupils, in which discussion of the development of geometry among the Greeks played a paramount role. But not many of the readers for whom this anthology must be intended will be in a position to appreciate this property on its own. And the collection contains none of the important pieces which she wrote on this subject - such as "La science et la mythologie", translated by Richard Rees as "Classical Science and Myth" in his collection *On Science, Necessity and the Love of God*.

This is not a topic to be ignored by anyone interested in coming to terms with Simone Weil's relation to our present century. It is a century in which the prestige of science has been enormous (and though more and more sceptical voices are to be heard as it draws towards its close, the dominance of science within our culture is hardly decreasing perceptibly). Simone Weil's critique of contemporary culture faces this overwhelming fact squarely. It does this not through any anti-scientific reaction. Rather, it attempts to show that a corruption of the original inspiration of science itself lies at the root of the corruption of culture in general. And for her the regeneration of culture would hardly be possible in the absence of a regeneration of science of a kind which most of its present practitioners are too much a part of its corruption to understand the necessity of. One aspect of this is the fragmentation of intellectual culture into a multitude of specialisms of which it is virtually impossible for any individual to gain a perceptive overview.

Thus a form of inquiry which originally applied to promote some understanding of the world and of our own place in it is now one of the major obstacles to such understanding. Diagnosis of this situation was always one of Simone Weil's main concerns and one which stood in intimate internal relation to her other preoccupations. Hence the omission of any treatment of this subject is a major gap in this collection, and the results in a somewhat distorted picture.

I am glad, though, that Virago have published the volume. It will stimulate new interest in this important figure of our times. And perhaps one day the systematic editorial work that is still necessary will result from that stimulation.

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Turkey's version

The Armenian File: the myth of innocence exposed by Kamuran Gürün, K. Rustem and Bro, and Weidenfeld & Nicolson, £17.95 ISBN 0 297 78705 5

This is in many ways an unsatisfactory book. Its style is laboured and unidiomatic (it is a translation of a considerable parts of it no clear line of argument can be detected. It includes too many elementary errors in names, dates, and so on.

But, much more serious, it presents a view of its subject which is partisan and incomplete and which misleads through its incompleteness. Yet it is not without interest as a statement, however one-sided and poorly expressed, of a viewpoint which has

her most fundamental idea was that the formation of concepts cannot be understood as a purely "mental" abstraction from passively experienced sensations, but is a function of our bodily activities of which work is the methodical form. On the other hand she very early on diagnosed this separation as the essence of the social oppression characteristic of modern industrial society with its division between "workers" and "managers". She followed out the practical implications of these ideas in her own life with the utmost consistency and courage. As a student and then as a teacher she was already deeply involved in working-class politics - much to the dismay of the French educational bureaucracy. Subsequently - and in spite of her evident physical unfitness for such a role - she worked in factories, including spells as a power-press operator in an electrical factory and on the production line at the Renault works. In 1936 she joined a group of Catalan anarchists fighting in the Spanish Civil War. Later, in spite of the increasing fragility of her health, she worked long hours in the fields as an agricultural worker, experiences which bore remarkable fruit in her writings: for instance in her late striking reflections on the religious symbolism of agricultural labour and the possibilities of finding something comparable in industrial production.

Some time after the defeat of France by Germany she contrived to join De Gaulle's Free French in London (making a hazardous and harrowing journey from Marseilles via New York and writing profusely and well all the time in the most adverse conditions). In London the collapse of her health, no doubt hastened by her refusal to eat more than the minimum rations allotted to workers in occupied France, led to her death in a sanatorium in Ashford, Kent. The precise circumstances of her death are in many ways obscure, but the spirit in which she approached her end is movingly reminiscent of descriptions of the reputed rite of *endura* ascribed to the Cathars, about whose manner of life and savage suppression by an unyielding alliance of the Catholic church and the French Crown she had earlier written so marvelously.

The publication of this new anthology of Siân Miles by such a firm as Virago should give a major boost to the British public's interest in Simone Weil's work. For this one must be grateful. It is a volume which contains some wonderful pieces which will now reach many more readers than hitherto. The editor's introduction too contains a valuable compressed biography of Simone Weil providing much interesting detail combined with sensitivity to the shape of her life.

But one's gratitude, unfortunately, has to be qualified. The claims made for the anthology by Sara Maitland in the blurb can hardly be sustained: "In this book we can meet a broader, more interesting and far more human Simone Weil than her previous spiritualizing editors have allowed us." Leaving aside the banality of this characterization

of Simone Weil's peculiar gifts ("clever" forsooth), what are the grounds for saying this? Most of the contents of this anthology have already been published in English translation: for instance the essays on "Human Personality", "The Iliad, or the Poem of Force", "Draft for a Statement of Human Obligations" and "The Power of Words"; and the extracts from *Gravity and Grace*, *Oppression and Liberty* and *Waiting on God*. The only new piece is a translation by Siân Miles of an extract from *La condition ouvrière*.

Pioneering collections like those of Richard Rees (to which this volume is heavily indebted) certainly do not deserve Sara Maitland's belittling characterization. And, as far as anthologies go, George A. Panichas's *The Simone Weil Reader*, published in 1977 by David McKay, New York, contains most of the material on offer here and much more, and is far superior in its representation of the scope of Simone Weil's interests. The Virago collection is considerably more attractively produced and accessible and it is well worth having for those reasons. But at this stage in the reception of her work in this country the question must arise whether this is enough. Were there not opportunities to be seized to make a more positive contribution to the understanding of her thought?

Most obviously, there was the opportunity to publish translations of some of the major essays which are still unavailable: such as "Essai sur la notion de lecture", "L'attitude du gouverneur provisoire". There was also an opportunity to present a selection of the writings in an order which would have displayed both some of the interconnections between Simone Weil's lead-

ing ideas and, above all, some picture of the way in which her thought about certain matters changed and developed. This latter is not of mere historical interest, since to understand the route by which she arrived at her mature positions is to understand something of what those positions amount to in themselves.

For example, three pivotal pieces printed here are (in this order) "Human Personality", "The Needs of the Soul" and "Analysis of Oppression". These all concern the relation of oppression to justice; but the last of them is a very early work, the other two very late. Between them Simone Weil's conception of what oppression consisted in had changed very radically. Whereas, in the early piece, she had based it on a conception of human nature which placed free individual self-determination at the centre, "Human Personality" makes a certain relation of the individual to the good fundamental: a relation which is spelled out in terms of a plurality of often mutually antithetical "needs of the soul" in the extract from *The Need for Roots*. The distance between this conception and the earlier one is highlighted by the fact that although *liberty* is indeed included as one of the needs, it is juxtaposed to the need for *obedience*. There is a long story behind that change: of a struggle with the inadequacies of the conception of human nature which Simone Weil had inherited from Descartes. But this struggle, along with much else that could have been displayed to view, is obscured by the selection and ordering of this anthology. Siân Miles does, in her introduction, give a chronology of the topics to which Simone Weil addressed herself in the course of her life, but here too there is little sense of the

BOOKS

The corruption of intellectual culture



Simone Weil

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fundamental changes (or, a fortiori, of the reasons for those changes) in her conception of the problems. One element in Simone Weil's development is the deepening of her conception of geometry as a model for the study of human life and society. It is a model which provides much of the structure for her wonderful essay on *The Iliad*. In order to appreciate the significance this model had for her, however, we need to know something of what she wrote about geometry itself. The introduction does quote an early letter explaining her method of teaching science to her lycée pupils, in which discussion of the development of geometry among the Greeks played a paramount role. But not many of the readers for whom this anthology must be intended will be in a position to appreciate this property on its own. And the collection contains none of the important pieces which she wrote on this subject - such as "La science et la mythologie", translated by Richard Rees as "Classical Science and Myth" in his collection *On Science, Necessity and the Love of God*.

This is not a topic to be ignored by anyone interested in coming to terms with Simone Weil's relation to our present century. It is a century in which the prestige of science has been enormous (and though more and more sceptical voices are to be heard as it draws towards its close, the dominance of science within our culture is hardly decreasing perceptibly). Simone Weil's critique of contemporary culture faces this overwhelming fact squarely. It does this not through any anti-scientific reaction. Rather, it attempts to show that a corruption of the original inspiration of science itself lies at the root of the corruption of culture in general. And for her the regeneration of culture would hardly be possible in the absence of a regeneration of science of a kind which most of its present practitioners are too much a part of its corruption to understand the necessity of. One aspect of this is the fragmentation of intellectual culture into a multitude of specialisms of which it is virtually impossible for any individual to gain a perceptive overview.

Thus a form of inquiry which originally applied to promote some understanding of the world and of our own place in it is now one of the major obstacles to such understanding. Diagnosis of this situation was always one of Simone Weil's main concerns and one which stood in intimate internal relation to her other preoccupations. Hence the omission of any treatment of this subject is a major gap in this collection, and the results in a somewhat distorted picture.

I am glad, though, that Virago have published the volume. It will stimulate new interest in this important figure of our times. And perhaps one day the systematic editorial work that is still necessary will result from that stimulation.

Peter Winch is professor of philosophy at the University of Illinois.

Intensifying hostility to the Armenians well before 1914. In the last chapter, which deals with the difficult birth of the Turkish Republic in 1918-23, the Armenians become little more than pawns in a game in which the British, the French and the Turkish nationalists were the main actors. Here, even more than elsewhere in the book, the narrative disintegrates into a tissue of long quotations tenuously linked by the author's comments.

This is, then, a one-sided account of its subject; and the style and organization, or lack of them, do not make it easy to read. Nevertheless there is a Turkish case to be made at least in mitigation of guilt for the "Armenian Massacres", and a case which, as Mr Gürün says, has hitherto gone largely by default. As an effort to redress the balance this book has some interest; but the case could have been much more effectively made.

M. S. Anderson

M. S. Anderson was until recently professor of international history at the London School of Economics.

BOOKS

Left-wing coup

Race, Power and Resistance

by Chris Mullard
Routledge & Kegan Paul, £19.95
ISBN 0 7100 9774 3

Racial Conflict in Contemporary Society

by John Stone
Collins and Fontana, £16.50 and £3.50
ISBN 0 00 197173 5 and 6860168

The Institute of Race Relations was once a widely respected organization. Operating from luxury offices in Mayfair and lavishly funded by multi-national companies, the institute, during the 1950s and 60s, established for itself the reputation as Britain's foremost authority on matters of race. The institute's raison d'être, as laid down by its predominantly ex-public school, professional and white governing

council, was the promotion of racial harmony through peaceful integration, and its method the production of objective and scholarly research into the "fact" of race. That reputation no longer stands. The plush offices have gone, as has the big-business funding. No government now gives tuppence for the views of the institute - and activist, neo-Marxist propaganda has replaced the impartial reports and academic monographs for which it was once distinguished. And if this assessment appears mischievous it is, in fact, not so; for the situation it describes is precisely what was intended by the institute's "palace revolution" of 1972.

Race, Power and Resistance is the story of that revolution from the perspective of the revolutionaries who made it. As a blow-by-blow account of the plots and tactical manoeuvres of the two sides (on the one hand the institute's council, "establishment" figures to a man, and on the other its "black and radical white" staff, led by the librarian A. Sivanandan) it is a story well told and makes for absorbing reading. Given the status of an event "possessing symbolic significance as a microcosm of larger processes", however, it is, frankly, preposterous. Chris Mullard would have the reader believe, as he and the institute's young Turks clearly did and still do

believe, that the heady events of 1972 were part of "an international movement of resistive struggles that started in Africa and spread over two decades to the entire black world". In fact, those events bear an altogether closer resemblance to that time-honoured western capitalist phenomenon, the board-room takeover, than they do to third world revolution. For, in the end, it was the young Turks' majority shareholding - that is to say, their votes - which brought them to power.

Would South Africa's African National Congress feel forced to postpone victory because of "a procedural inconsistency"? As inconceivable, surely, as a defeated President Bush confiding to a colleague, as did the institute's ousted director Philip Mason, "On losing the battle I feel quite philosophical. Let them have a bash".

Stripped of its Marxese, Mullard's account reveals a straightforward battle for votes between competing interest groups. As he accurately describes the situation immediately prior to the impending coup, "All now rested on the question of how many supporters for both groups in struggle would turn up at the AGM" and here, of course, the council's old guard were at a fatal disadvantage. Packing meetings is the very stuff of left-wing

activism whereas, for the governing body's traditionalists, "It was considered infra dig or positively bad form to blatantly badge up support". Besides, it was holiday time, not to mention the inconvenience of a rail strike which made getting up from the country difficult.

And so the revolution was won; not by armed struggle or the winning over of the hearts and minds of the people but by a more mundane (and distinctly un-African) 142 votes to 99. Within weeks nearly half a million pounds' worth of funding had been withdrawn, the institute had moved to run-down offices in King's Cross, the news-sheet *Race Today* had been given away to community activists and the academic journal *Race* had been appropriately renamed *Race and Class*.

The reformism of *Racial Conflict in Contemporary Society* will not endear it to the institute, particularly when it leads John Stone to favour a policy of "positive discrimination", a liberal response to racial problems much scorned by Marxists. Dr Stone is led to this via his thesis that the pattern of race relations is primarily influenced by the balance of power between majority and minority groups. Drawing on Furnivall's concept of a plural society, and Louis Wirth's definition of a minority as "a physically and culturally distinct group, subjected to and conscious of its unequal treatment by the majority", Stone argues that it is the degree of correspondence between racial and power divisions which is the crucial factor in the generation of racial conflict. He is at pains, however, to reject the narrow Marxist understanding of "power", preferring to extend its meaning to include a group's cultural resources, or what economists term its "human capital".

Stone tests his proposition against a variety of international contexts noting, as he does so, the strengths and weaknesses of alternative approaches. In particular, he argues against the view, perhaps less fashionable today, that the rationalism implicit in the process of modernization is, in itself, a force for inter-racial harmony. On the contrary, stability is only likely when the modernization process does not

alter the balance of power. We do so, in favour of a minority, at the expense of the majority, the ethnic identity is increased and the possibility of racial conflict is diminished.

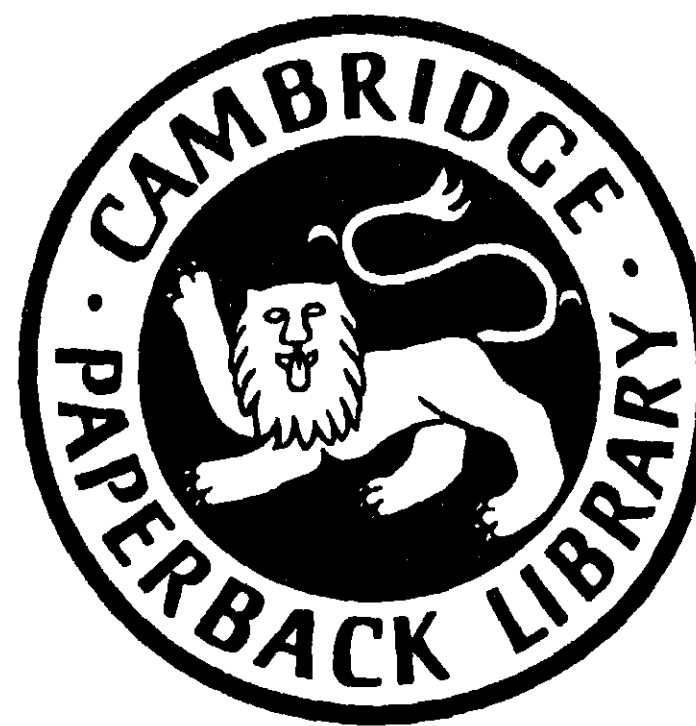
Stone's undogmatic approach, him to acknowledge difficulties in position, that of South Africa being the most obvious. The balance of power between the nation's racial groups clearly reveals the pattern of current racial relations. Numerically, however, it is a group which dominates.

The book's concluding chapter, "The Quest for Racial Justice", addresses the vexed area of policy. Its central question is: what balance of power lies at the heart of racial conflict, to what extent is that balance to be altered by means? Stone gives cautious answers to such measures as positive discrimination and racial quotas but does not me that most of the evidence tends not to help those for whom intended, as a recent book by Oz Murray (*Loosing Ground*, 1984), American social policy clearly states. Discriminatory policies, aimed at economic outcomes while as Stone himself notes, the reality of potential power is a minor "human capital". These cultural sessions can no more be legislated existence than they can be legitimated out of it, a fact amply confirmed by history of overseas Chinese success the face of often violent discrimination.

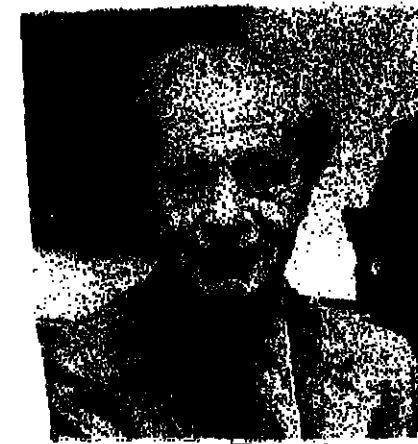
Dr Stone's short but wide-ranging book is an important contribution to the sociology of race relations, and for its open-mindedness as for a authoritative analysis. As he notes "In the field of race and ethnic relations, as in most areas of social life, they are few simple problems and still fewer simple solutions"; a piece of understatement whose importance would perhaps be lost on the Institute of Race Relations.

David Dale

David Dale is a social worker in Westminster City Council.



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Realist v relativist

Understanding Social Science: a philosophical introduction to the social sciences

by Roger Trigg
Blackwell, £18.50 and £5.95
ISBN 0 631 13365 8 and 14101 8

In 1983 the Social Science Research Council became the Economic and Social Research Council. At the behest of Sir Keith Joseph, so it is said, the word "science" disappeared from its title. On the other hand one can recall government ministers, Sir Geoffrey Howe springs to mind, saying years ago that monetarism is an undeniable truth, "like the law of gravitation". Sir Keith and Sir Geoffrey, though both monetarists, seem to have had opposite views about the limits of social science. Their opposing views seem to have derived from a similar and naive view of that undeniable science, physics.

Philosophies of social science are part of our political culture. But the issues are also deep. Can an alien society have a conceptual system different from ours? If it could, would it be forever unintelligible to a visiting anthropologist? Could a society be irrational? Can social science be value-free?

Monetarism comes unstuck for a variety of reasons, one of which is the fact that inflationary expectations can be a cause of inflation. Because the social sciences deal with human beings, as individuals and in society, it has to forego some of the perceived features of physics, like determinism. The contrast with physics is a perennial vehicle for some questions about the social sciences. Can a social science be a real science? Are the social sciences

objective? Since the early 1960s this source of philosophical worry has seen some changes. The positivist image of physics has fallen into disrepute among English and American philosophers owing to the critiques first of Popper, and secondly and much more radically of Kuhn and, to a lesser extent, Feyerabend. From the work of Popper, the idea of a secure foundation of knowledge in sense experience has come to seem untenable, and the idea that there is an algorithm for arriving at theory on the sole basis of experience has come to seem absurd. Physics has lost much of its certainty and, with the quantum theories, acquired its own mysteries.

Further, and to the chagrin of Popper, sociologists of knowledge have extended the objects of their activities to the undeniable sciences. The result has been something of a reversal of the relation between physics and sociology. Physics is liable to be seen as just another "form of life". A philosophical relativism has come into fashion, echoing themes to be found in Kuhn and Feyerabend, according to which science is just one ideology among many.

Dr Trigg's textbook is thus timely as well as useful, solid, rather middle-of-the-road, sensible and also not very exciting. It attempts to handle philosophically all the main movements in contemporary social science, including for example sociobiology, structuralism and Marxism. It shows signs of having been developed from a comprehensive lecture course.

But like every philosophical textbook it has a philosophical line to put across. Trigg is realist, anti-relativist and he believes in a human nature, without one it would be miraculous that we could understand other cultures. Trigg assumes that we do. Human nature is prior to language otherwise it would be miraculous that we could learn and teach it. Physics and the social sciences must have

different methodologies but they must both hold to the regulative principle of realism.

But Trigg's main point is this. That social science is inherently philosophical in that it necessarily involves assumptions about the nature of human beings and of their role in human societies, and that it is no more to be despised for this than is philosophy itself.

Despite the hackneyed illustration on the dust jacket, I can nevertheless recommend the book as a good survey for the student philosopher and social scientist alike.

Peter Gibbins

Dr Gibbins is secretary of the British Society for the Philosophy of Science.

Ethnic findings

Twice Migrants: East African Sikh settlers in Britain
by Parminder Bhachu
Tavistock, £15.95 and £7.95
ISBN 0 422 78910 0 and 78920 8

If there is one tradition that stands out as characterizing British work on ethnic relations, it is the descriptive community ethnography. Such works have formed the backbone of our research output and constitute an unbroken thread of work which can be traced back as far as the late 1940s.

The methodology involves the detailed description of how one particular ethnic group in one city at one point in time is adapting its way of life to circumstances in a new society. As the fieldwork of ethnic relations has developed in breadth and depth, so has the community ethnography. Initially such works outlined the major characteristics of the "coloured population" (Michael Banton's *Coloured Quarter*); then attention focused upon groups defined by nationality or birthplace (Desai's *Indian Immigrants in Britain* or Patterson's *Dark Strangers: West Indians in London*); and latterly there has been a series of ethnographies of specific ethnic groups (Hewitt's *Sikhs in England* and Anand's *The Myth of Return: Pakistanis in Britain*).

This trend to ever more precise description has been particularly apparent within work on Britain's Asian population, where evidence in the late 1970s began to reveal the importance of internal distinctions along axes of differentiation which included birthplace, migration history, religion and regional origin. Bhachu's book consequently represents a logical extension of this tradition. She is concerned not with all Sikhs in Britain, but only with those who are "twice migrants" because they came to Britain via East Africa.

There are some 181,000 East African Sikhs in Britain, drawn from communities which left the Punjab in the early part of the 20th century as indentured labour to build the Kenya-Uganda railway. Throughout the intervening period, these Sikhs had



A Sikh temple in Coventry

become progressively estranged from the Indian sub-continent and had sought their future in education and social mobility into white collar employment within the colonial administration. There they occupied a middleman role between white and black. It was only the progressive Africanization policies of administrations in the newly independent states of Kenya, Uganda and Tanzania which drove them from Africa to Britain. Coincidentally this enforced migration occurred shortly after the peak of voluntary labour migration direct from India and Pakistan to Britain, and the East African Sikhs found themselves "re-united" with mainstream Sikhs who had travelled direct from the Punjab.

Bhachu rightly distinguishes these groups and comments on how the East Africans were better equipped for life in Britain, how they were permanent settlers not economic transients, and how their occupational skills allowed a much more diversified employment structure, and therefore the resources to assist geographical dispersal. In contrast to this superficially progressive appearance, though, Bhachu characterizes the "twice migrants" as a conservative group who observe their traditions more stringently than their counterparts who migrated direct. Indeed, Bhachu uses the phrase "Victorian Sikhs" to describe the East Africans, and uses the arranged marriage and dowry systems of those "twice migrants" living in Southall to illustrate her point. To be fair, though, Bhachu does argue that the East Africans should not be seen as ossified

and she sensitively describes how the practices and traditions are changed albeit perhaps not at the same speed as their direct migrant counterparts.

The major weakness of this book is not a fault of Parminder Bhachu. She has refined and extended existing knowledge through the use of a well tried methodology. It is just that this methodology has inherent flaws which are easily duplicated and rarely avoided. Many would argue that time for describing ever more finely proscribed ethnic groups is over and that it is incumbent upon researchers to move on to comparative and investigating, for example, why different groups respond in different ways to the same stimulus of life in Britain with its economic recession and ethnic racism, or indeed how members of the same group respond to the different constraints and opportunities which exist in different cities with their unique histories, economic infrastructures, and local cultures. Others would argue that the community study of the frequently fails to take account of the wider structural context within which all ethnic groups must operate. Ethnographers must consider the nature of the encompassing society, its exclusionary practices and its mechanisms for allocating resources before they can fully understand the nature of any group operating within it.

Vaughan Robinson

Vaughan Robinson is lecturer in social geography at University College Swansea.

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BOOKS

Desire for order

Order and Disorder in Early Modern England edited by Anthony Fletcher and John Stevenson
Cambridge University Press, £27.50
ISBN 0 521 25294 6
Revel, Riot and Rebellion: popular politics and culture in England 1603-1660
by David Underdown
Clarendon Press: Oxford University Press, £17.50
ISBN 0 19 827957

At a time when our own society is having to confront major problems relating to order and disorder the publication of these two volumes acquires an added, if unintended, significance. Moreover, the stance and tone revealed here are often not altogether dissimilar to those evinced by the present government. "Increased levels of disorder owed less to intra-communal strife than to the intrusion of 'outsiders'." The words could be those of the present Home Secretary but in fact occur in a trenchant reassessment of the upheavals and disruptions of the English Civil War.

The volume of essays edited by Anthony Fletcher and John Stevenson is above all a celebration of stability and order. "The English people in the early modern period", the editors insist, "were not an ungovernable people". "A sense of the desire for order... of man's search for it, and the anxiety with which they clung to it, runs through these essays." Though increasing social polarization is conceded, they vigorously reject a class interpretation of early modern English society, and left-wing historians like Christopher Hill and E. P. Thompson are suitably admonished for getting it wrong.

The essays range widely in subject matter, scope and period. Margaret Spufford's essay harks back at one point to the 15th century; John Stevenson's takes us on almost to the opening of the Victorian age. Popular culture, religion, politics, levels of disorder, gender relations, attitudes to the law, status and precedence all come under discussion. No wonder, faced with such miscellaneous contents, that the editors' introduction is hard pressed to provide an effective framework for all that follows.

All the contributions, however, are individually worthy, all face up squarely to the problems present in the sources, and some offer provocatively original and important reinterpretations. Pride of place - for sheer boldness, at least - should perhaps go to John Morrill and John Walter for their fundamental reappraisal of "Order and Disorder in the English Revolution". They argue that the

commonly invoked image of disorder in the civil war is to a large extent an illusion caused either by the politically inspired exaggerations of royalists and parliamentarians (the idea of a "popular presence", for different reasons, suited both) or by the distortions of old men's imprecise recollections. Popular radicalism, they rightly claim, never had more than a minority appeal. Fear of disorder, it is no doubt true, greatly exceeded the reality. In the localities, at least, there was much "business as usual".

Margaret Spufford in her lively essay on "Puritanism and Social Control" takes issue with those historians who have seen a special and distinctive connection between the two elements in her title. She offers a salutary reminder that puritanism must be seen above all as a religious not a social phenomenon, that its adherents were not restricted to the middle ranks, and that the "pious discipline" - often mistakenly seen as a puritan invention - was, in fact, neither new nor unfamiliar in the late 16th century. C. S. L. Davies complements what he has already published elsewhere on the Pilgrimage of Grace by a searching essay on the extent to which it expressed popular religious conservatism in the face of the Henrician destructions.

Clive Holmes writes on the 17th-century fenland disturbances, emphasizing the contribution made by the middle sort, and attempting to unravel the mysterious involvement of the Leveller John Lilburne. John Stevenson's re-examination of E. P. Thompson's "moral economy" thesis finds it deficient in terms of its chronology, its rigid oversimplification of local variations, and its imprecise definition of "crowd". A. J. Fletcher looks at why and how local office-holders guarded their reputations so jealously. The gentry disputes over precedence in the 17th-century counties which he illustrates with their modest parishual parallels in the squabbles which Susan Assmann's chapter includes over seating arrangements in the parish churches. The principal focus of her essay, however, is that of the 17th-century crisis in gender relations. As such it neatly complements David Underdown's piece on "The Taming of the Scold". An intriguing investigation of ducking stools, skimmings, witchcraft, and village termagans.

Underdown takes pains to relate these phenomena to their community settings. A full-scale investigation of this social, economic and cultural diversity is provided in the same author's *Revel, Riot and Rebellion*. Here the main objective is to explore patterns of popular allegiance in the civil war in the three heavily contested counties of Dorset, Somerset and Wiltshire. (With tongue in cheek, no doubt, he says that the elite politics of this period is already clear enough). But though this is primarily a study of a specific region in a specific period, there are fruitful comparisons with other parts of England, as well as those of the historian are brought into play. The chronological range of the book is extended, too. The final chapter takes the discussion beyond the Restoration and there are some telling remarks on Monmouth's rebellion.

No part of the country suffered more in the civil war than the western counties. Troop movements, quartering, taxation, all had a significant impact. The war exposed deep-rooted divisions and aroused conflicting allegiances. But as well as emphasizing the politicizing effects of the civil war Underdown is careful to relate the divisions of that period to the long-term trends that lay behind them. The destabilizing effects of population growth, inflation, and enclosure are examined, as is the local evidence concerning the rise of the gentry and the consolidation of yeoman oligarchies. Puritanism figures prominently. Following observant contemporaries like Harrison, Aubrey, and Baxter, as well as modern economic historians like Joan Thirk, Professor Underdown has much to say about the fundamental cultural contrasts between the traditional, open-field area of the downlands, the north Somerset and Wiltshire cheese and cloth-making region, and the intermediate zone of south-east Somerset and Blackmore Vale. The cohesive, nucleated village communities of the first region, with their church ales and foot-balls, resisted the intrusion of puritanism and in the 1640s were inclined - even if often unenthusiastically - to royalism. It was in the second region - with its varied economic and social experience of individualism -

that puritanism and parliamentarianism made most headway. The emergence of the popular stereotypes of "cavalier" and "roundhead" is perceptively analysed. Needless to say, of all the possible determinants of allegiance - social deference and class antagonisms included - it is the formative contribution of contrasting regional cultures that Underdown finds most important.

The case advanced for the extent and nature of popular involvement in the civil war is a convincing one, despite some initially surprising dimensions: the sporting contrast offered between local royalist footballers and the stoolball preferences of the parliamentarians, naturally, has to be carefully pondered! The author presents a full account of economic and social structures and relations, cultural tendencies, and patterns of parochial and manorial government. His book usefully combines the characteristics of a detailed monograph with those of a general history. Underdown has a good eye for illuminating details as well as the capacity to range widely and seek out patterns. "Neighbourhood, an I stone picker or a day labourer?" The indignant response made in Chippenham in 1617 to the call for work on maintaining the highways is eloquently expressive of status obsessions even among the lowest ranks. While the trials of local office-

holding are vividly demonstrated by the Osborne churchwarden who enjoyed a Sunday game of bowls in 1620 and then, conscience stricken, presented himself for the offence before the ecclesiastical court.

Problems remain, however, on account of the sources, despite some valiant attempts at qualification in chapter seven. There is far more direct documentation about rank-and-file royalists in these counties than about the other side. The practice of conscription, in any case, self-evidently complicates any analysis of freely given popular allegiance. "The wisest course for the historian confronted by such problems might well be to abandon the enterprise and consign questions about popular allegiance to the extensive category of the interesting but unanswerable." Specialists in this period will be grateful to Professor Underdown for his refusal to capitulate. But then, to be sure - the author's favourite phrase which he repeats with maddening frequency - no less would have been expected from this seasoned veteran of *Royalist Conspiracy in England and Pride's Purge*.

R. C. Richardson

R. C. Richardson is head of history and archaeology at King Alfred's College, Winchester.



Henry Brougham

A fall from office

Henry Brougham 1778-1868: his public career
by Robert Stewart
Bodley Head, £18.00
ISBN 0 370 30271 0

Henry Brougham trained at the Scots Bar, made his name with a book on the colonies, and became a leading contributor to the *Edinburgh Review*, where "the rational discussion of political questions was not incompatible with polemical spirit". He belonged to the generation of Whig MPs for whom the intelligence and bravery displayed by the Spanish people when they rebelled against Napoleon in 1807, vindicated the masses and justified a belief in the goodness of man. In 1812 he secured the abolition of the Orders in Council: in 1816 the termination of the income tax. In 1820-21 he was counted as Queen Caroline. By 1827 he seemed to have the leadership of the Whig party in the House of Commons in his grasp. In 1830, his election for Yorkshire precipitated the reform crisis.

Brougham was a man of brilliant talents. "Solon, Lycurgus, Demosthenes, Archimedes, Sir Isaac Newton, [and] Lord Chesterfield" all in one, as Samuel Rogers put it. But he had another side. John Morley referred, much later, to his "encyclopaedic ignorance". Self-assurance led him,

after the vote upon the income tax, to offer himself to the nation as prime minister in Lord Liverpool's place. Vanity caused him to deliver both the longest speech ever made in the House of Commons, and the longest speech ever made in the House of Lords. Even in the cause of liberty, Brougham failed to act consistently. In 1805 he urged simultaneously for an end to the slave trade and for the suppression of the slave revolt in Haiti. In 1833 he dismayed the abolitionists by supporting the seven years apprenticeship for the emancipated slaves.

The result was that, when the Whigs finally came into office, Brougham was regarded as "impossible". Grey adroitly made him Lord Chancellor to get him out of the House of Commons. Brougham cleared off the arrears. In Chancery, created the judicial committee of the Privy Council, and set up a commission to consolidate and codify the law. But he was not a dignified Chancellor. He scribbled away at his correspondence while hearing litigation, and took the Great Seal up to Scotland, where the ladies played life and seek with it. In 1834 "Wicked Shifts", as Creevey called him, brought down Grey's government. In 1833, when Melbourne formed a new administration, he refused to have anything to do with the new government, because he objected to "his whole character and his whole conduct". Brougham never held office again.

Chester New made a mistake when he planned a two-volume life of Brougham and divided it at 1830. Only the first volume was ever published, and the second half of Brougham's career is of so reduced interest that it is difficult to see how a second volume of comparable size could ever have been completed. Robert Stewart allows 100 pages out of 361 to Brougham's career from 1830 to 1868, and who can fault his sense of proportion?

Brougham, as Robert Stewart says, is best remembered for his contributions to education. He joined James Mill and others in founding the British and Foreign School Society. He was associated with the Mechanics' Institutes, the Society for the Diffusion of Useful Knowledge, London University, and the *Penny Cyclopaedia*. In an age when Tories still equated literacy with sin and the subversion of the social order, Brougham championed the claims of the masses to information and opportunities for self-improvement. His greatest achievement was to show, through the establishment of the Charity Commission, the extent to which the means already existed to provide them.

Robert Stewart's book is an appropriate, and judiciously critical life of Brougham, marred only by a few minor factual errors. However, the impact of a pleasingly written life is weakened by generalizations like "a politician, to win the visible rewards of his vocation, must seal up his compassion and narrow his mind".

John Prest

John Prest is a fellow of Balliol College, Oxford.

William Doyle

William Doyle is professor of history at the University of Bristol.

BOOKS

Romantic influence

The Romantic Tradition in British Political Thought
by Jonathan Mendilow
Croom Helm, £22.50
ISBN 0 7099 3559 5

Jonathan Mendilow's book is a careful and thorough tracing of Romantic ideas in British political thought. It begins with the changes wrought by the French Revolution and its aftermath upon the thought of the Romantics, and goes on to consider the influence of that thought on the development of varieties of British conservatism and socialism. The period covered is from the end of the 18th century to the eve of the First World War.

In the brief introduction Jonathan Mendilow claims that the Romantic contribution to political thought is twofold: the adoption of the principles of the manorial system to industrial conditions, which offered to forge a community out of an aggregate of individuals; and the advocacy of the state as the site which would resolve conflict and as the incarnation of the nation. The first four chapters focus on what are in effect three generations of Romantics: Wordsworth, Southey, Shelley (and to a lesser extent Keats), and Carlyle; the fifth examines "Three Shades of Tory Radicalism" in the persons of Disraeli, Kingsley and Ruskin. The last two chapters, the most interesting, make unexpected connections. Romantic thought is traced in influential members of the Independent Labour Party, principally Keir Hardie and Robert Blatchford, who sideways glances at Ramsay MacDonald and Bruce Glasier; and in the imperialist arguments of such figures as Lord Milner, Kipling and Bruce Kidd.

At one point it might have been better advised to identify a cluster of concerns and keywords of the Romantics and show how both were made and

re-made in new contexts rather than try to establish influence which, he himself admits, is sometimes "largely at second or third hand". When he is usually walking well-trodden ground. For instance, Carlyle's importance to Kingsley and Ruskin hardly comes as a surprise. The real interest of the book is in the later chapters where Jonathan Mendilow convincingly shows, first that the Romantic tradition helped at least one strand of socialism to see the state as, in Keir Hardie's words, "the expression of the will of the people"; and, second that it provided a vocabulary which was enthusiastically embraced by late 19th-century imperialists.

Despite its title, this study offers us only one tradition of Romantic thought. The radicalism of the Romantics is excluded, and it will not do to say that such radicalism went underground later in the century. The career of William Morris, who unaccountably is not discussed, would be sufficient to reject that argument. As would that of Edward Carpenter, another late 19th-century socialist clearly indebted to the Romantics, yet opposed to state socialism and alert to the necessity of alliances between the organized working class and forces such as the women's movement. Women are a crucial omission, if a usual one in studies of political thought. Yet the inclusion of Mary Wollstonecraft and her influence on early 20th-century feminism would have significantly altered the judgements in this study.

Perhaps the most disappointing feature of the book is its failure to consider the various ways political thought and politics itself were defined during the 19th-century. What a study of the various Romantic traditions would make clear is that what counted as politics and what kind of writing was accepted as political were (as they still are) contested matters. Consider, for example, the conflict between Romantic "utopian" socialism and "scientific" socialism during the period of this study. Within its narrow limits, Jonathan Mendilow has written an interesting book.

Philip Dodd

Philip Dodd is lecturer in English at the University of Leicester.

The power of fiction

Cervantes
by P. E. Russell
Oxford University Press, £8.95 and £2.25
ISBN 0 19 287569 8 and 287570 1
Reading and Fiction in Golden-Age Spain: a Platonic critique and some picturesque replies
by B. W. Life
Cambridge University Press, £22.50
ISBN 0 521 30375 3

It is good to see Cervantes joining the prestigious Past Masters series and especially to see him presented there for what he is: a great comic novelist. Professor Russell's short book is a model of lightly-carried learning and imperturbable good sense. In his pleasantly terse style he makes so many good points - on affectionate quality, on ambiguity and uncertainty, on the absence of metaphysical earnestness - that almost one's only misgiving is the thought of seeing them endlessly repeated in examination scripts.

Intended for the general reader, the book may have a greater impact on serious students of Cervantes, for it is they who are most apt to forget that *Don Quixote* is a funny book. Russell rightly makes *Don Quixote* the centre of his study, explaining the comic purpose and its background very well. He does not quite succeed, however, in capturing the elusive quality of Cervantes's humour. "Sly" and "good-humoured sharp" are fair descriptions of Cervantine irony, but "gaily" seems quite the wrong word to describe the prevailing impression left by *Don Quixote* as a whole. In his determination to correct the Romantic distortion (which saw the hero as a more tragic figure), Russell makes the book sound more light-hearted, even hearty, than I believe it is. *Don Quixote* is a succession of laughable

calamities, a comedy of anticlimax and low spirits. Those who cannot see for themselves that Cervantes is funny are unlikely to do so with Russell's help (or anybody else's); but those who can may be enabled to feel less inhibited about laughing at a cultural monument, and thankful to be exonerated from seeking the wrong kind of hidden depths.

Dr Life's ideas on control of readers' involvement and detachment are highly relevant to *Don Quixote* (on which he makes some perceptive comments), although he chooses three less obviously suitable novels to illustrate his theme: the anonymous *Lazarillo de Tormes*, Alemán's *Guzmán de Alfarache* and Quevedo's *Buscón*. His subject is the effect on Golden Age fiction of the spread of private reading. This change, he argues, brought about a new and more intimate relationship between writers and their readers, a relationship in which moralists saw dangers and novelists saw opportunities.

The book is very attractively written: full of apt descriptions, astute comments and apposite topical analogies. His analysis of the moralists' (largely Platonic) case against fiction is scholarly and penetrating. The chapter on the psychology of reading is well-informed and of wide general interest. What is harder to be sure of is the connection between these two chapters and the ensuing discussion of the novels. It never shows either that the moralists actually read the picaresque novels or vice versa. One may also disagree on details in the commentaries but they are observant and stimulating and Life's way of looking at the author-reader relationship opens up fresh possibilities.

These two books illuminate each other's subjects as well as their own. The picaresque novels gain from being considered as funny books; *Don Quixote* is concerned (if only in fun) with the dangers of private reading and the magical power of fiction.

Daniel Rogers

Daniel Rogers is senior lecturer in Spanish at the University of Durham.

Imposing order

Order from Confusion: studies in eighteenth-century literature from Swift to Cowper
by Claude Rawson
Allen & Unwin, £27.50
ISBN 0 04 800119 1

The kind of volume long known in the classical world as *Opuscula* or *Kleine Schriften* has recently received a new gloss in the English literature lists as a publisher's favourite. This particular collection assembles a number of Claude Rawson's essays, articles and reviews from the last decade or so. The pieces are of widely varying length and provenance, testament to that amphibious contemporary figure, the professor-reviewer who moves with aplomb between the dry eminence of 82 learned footnotes and the more public ripples of the weekly reviews. There are moments when reviewing it in its turn gives an odd sense of *mise en abyme*, of the infinitely regressive and self-nourishing literary world - about which Rawson has written elsewhere - of Swift's own *Tale of a Tub*.

Individual reprints will prove useful at many levels - especially perhaps the substantial chapter on dialogue in Fielding, compounded of two essays unlikely to be tracked down in their original locations by the ordinary undergraduate. If there is a temptation to misconstrue the title of the book as a mild jest on its own genesis, it must yield also to a recognition of the coherence of the perspective through which the 18th century is here viewed. Collectively these essays bear witness to the revival in 18th-century studies to which the author's earlier books have largely contributed. The final piece, a review article from 1975, is a useful historical marker: in the publications of the previous year or two Rawson distinguishes two trends, one clustering theologically around Big Ideas of "cosmic order" and the other, more sociological in emphasis, around the theory and practice of madness and disorder. Rawson's sympathies are clearly with the latter: this is Augustinian "order" rather than the order of the capitalized abstractions through which its stability has been assumed. If there is an "order" in his reading of the 18th century it is a social rather than cosmic one - its model that of the dancing-master rather than a universal harmony.

Although one chapter alludes to the novels of Frances Brooke and Frances Sheridan as well as to Mary Wollstonecraft, this selection of essays presents an 18th century which is almost wholly without women except as poetic counterparts (on which he makes some perceptive comments), although he chooses three less obviously suitable novels to illustrate his theme: the anonymous *Lazarillo de Tormes*, Alemán's *Guzmán de Alfarache* and Quevedo's *Buscón*. His subject is the effect on Golden Age fiction of the spread of private reading. This change, he argues, brought about a new and more intimate relationship between writers and their readers, a relationship in which moralists saw dangers and novelists saw opportunities.

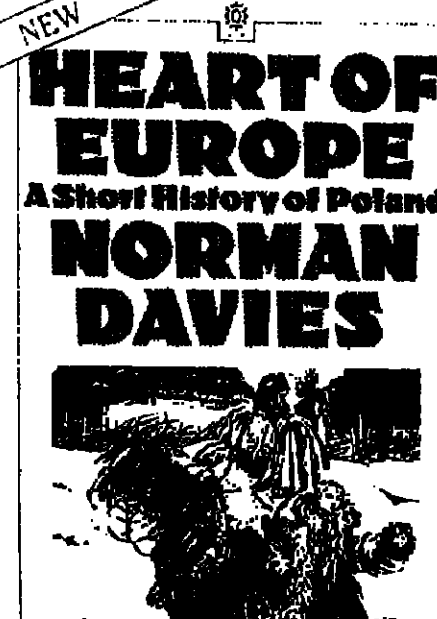
The book is very attractively written: full of apt descriptions, astute comments and apposite topical analogies. His analysis of the moralists' (largely Platonic) case against fiction is scholarly and penetrating. The chapter on the psychology of reading is well-informed and of wide general interest. What is harder to be sure of is the connection between these two chapters and the ensuing discussion of the novels. It never shows either that the moralists actually read the picaresque novels or vice versa. One may also disagree on details in the commentaries but they are observant and stimulating and Life's way of looking at the author-reader relationship opens up fresh possibilities.

These two books illuminate each other's subjects as well as their own. The picaresque novels gain from being considered as funny books; *Don Quixote* is concerned (if only in fun) with the dangers of private reading and the magical power of fiction.

Penelope Wilson

Dr Wilson is a fellow of New Hall, Cambridge.

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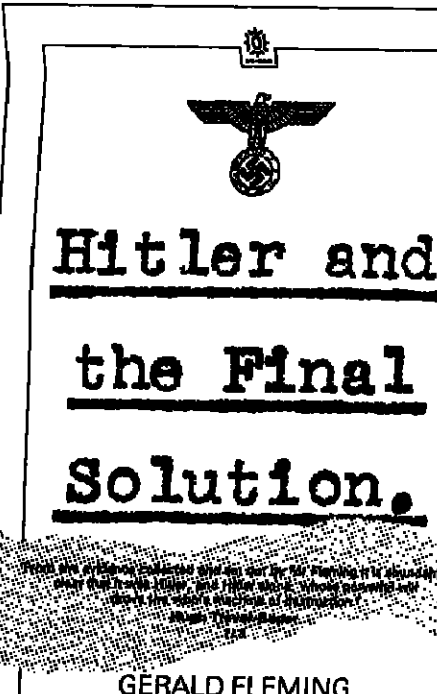


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BOOKS

Aims and tactics

Implementing Government Policy Initiatives: the Thatcher administration 1979-1983
edited by Peter Jackson
Royal Institute of Public Administration, £15.00
ISBN 0 910628 38 3

The First Thatcher Government 1979-1983: contemporary conservatism and economic change
by Martin Holmes
Wheatshaf, £15.95 and £6.95
ISBN 0 7451 0085 1 and 009 1 6

Perhaps it is not surprising that one of the major crises of the Thatcher Government, the Westland affair, was in the area of industrial policy and involved the Department of Trade and Industry. The basic strategy in industrial policy was to adopt a hands-off approach, reducing commitments in regional aid, industrial subsidies and other industrial support activities. Implementation ran up against the problem that a 16 per cent decline in manufacturing output made it very difficult to resist pressures for the rescue of British Leyland and ICI and for the DTI to act as a mouthpiece of industrial management. In any case the supply-side approach of generating an environment with more economic incentives for individual initiatives involves many departments of state even in any one area like industrial policy. Disengagement from industry is itself therefore fraught with problems of implementation.

Issues like this emerge very clearly from the Royal Institute of Public Administration's excellent collection of commissioned articles. Aside from Peter Jackson's introductory chapters setting out the macroeconomic background the focus is specific sectors. The problems in implementing policy cannot be characterized simply as managerial. They reveal whether the policy stands any chance of achieving its objective. For both politicians and social scientists they also reveal the extent of our ignorance of how society ticks. The volume has been written mainly by non-economists and contains much hard documentation on aims, tactics and performance.

It is clear that in several areas the Conservatives had already worked out detailed tactics for implementation or, more commonly, quickly realized what was needed and grasped the nettle. Housing for example was to be treated largely as an ordinary commodity. Policy was directed to promoting home ownership, and, as part of its more general stance on taxation and public expenditure, to concentrating a reduced volume of state aid on those most in need. As Alan Muir brings out in his chapter, the 1980 Housing Act therefore removed the discretion of local authorities with respect to council house sales and the right-to-buy programme was backed up with an advertising campaign.

In attempting to control local authority spending more generally as well as give more value for money in the direct labour organizations (DLO) the Government quickly realized it would have to reexamine the system of controls over local government. Justin Meadows explains clearly how methodically the Government proceeded in its local government legislation over the period 1980-82. Not that success was necessarily guaranteed. Housing expenditure was cut successfully as were the DLO workforces but local authority spending remained a problem pressing more drastic measures.

In other cases the liberalized regimes which the Government wished to promote meant explicitly eschewing any positive policy. As Roger Williams shows, since it was intended to regulate supply and demand by pricing, there was no "energy policy" as such and while there was some intervention in the promotion of small businesses and information technology there was, as Stephen Wilks brings out clearly, also little explicit positive industrial policy. In the area of personal social services for the elderly, sick, etc the aim was to cut expenditure and to transfer care from the formal state services to community, informal and private care. In relation to the latter, Webb and Wistow show that the

Government set no targets, created no hostages to fortune and hence, though now less defensibly and less explicitly, further policy definition was not needed.

It is clear that the Government found economic and social institutions rather more complex than anticipated. In housing and in privatization programme (very thoroughly set out by Heald and Steel) their electoral instincts were good. Both proved popular. And Rudolf Klein's chapter on health shows the Government to have recognized early that cuts in the National Health Service would not be well received. But in many areas, the attempts to liberalize, to promote efficiency and diminish the role of the state triggered off further intervention and controls. The policy of promoting competition in local government affairs and value for money in local services led to an extensive set of new controls. The right-to-buy programme was backed up with monitoring, blacklisting and progress chasing procedures. In the case of the National Health Service the only espousal of decentralization and localism gave way to increased emphasis on performance indicators, more rigorous accountability to central government and better management.

Shifting the personal social services from state services to community, voluntary and private care required government action and a new government framework. In the area of social security, as Susanne MacGregor's chapter brings out, the replacement of discretion by detailed obligations im-

posed by regulations has brought more complexity rather than simplification. Further, other unintended side effects would not have been welcome. The special privileges given to capital receipts from the sale of council houses involved a considerable effective redistribution of capital spending away from the inner cities towards areas not under housing stress. The general vilification of local government makes it difficult for the latter to work with the voluntary sector in the area of personal social services. The savings in housing subsidies raised income maintenance expenditures for relevant families. The stance on nuclear power created further distortions through the continued subsidy via the Atomic Energy Authority vote. Phil Beaumont's chapter shows employment falling in local government but not in the pen-pusher category and such non-manual labour also fared better than manual labour in wage and salary increases.

Apart from a regret that the trade union, education and transport are not covered the main deficiency of the volume is in not setting out in more detail what preparation had been made for implementing the programme. Heald and Steel refer for example to the research group under Nicholas Ridley which drew up an agenda and strategy for privatization but the report is not examined in detail. There are of course other wider issues involved. The Thatcher faction did make a significant break with the past, successfully changed the central tenets of the Conservative party and achieved

its objectives in several areas. How it exercised power in doing this and how far this was a matter of intelligent planning as opposed to force of personality are matters of considerable interest.

Light on such issues may have been expected from the book by Martin Holmes, lecturer in politics at Lady Margaret Hall, Oxford. *The First Thatcher Government* is concerned with central features of economic policy, arranged chronologically. However, it is not a serious piece of academic work. Highly contentious issues in economic policy are presented as settled facts. Public firms are more inefficient than private. Keynesians think all unemployment relates to aggregate demand deficiency. Britain's past record on economic growth is poor. That there might be a trade-off between unemployment and inflation is concededly treated as a legitimate matter for debate. The idea that high unemployment may in part explain the weakness of the unions, the reduction in strikes and the success of free collective bargaining is hardly broached. All is attributed to the retreat from corporatism and from incomes policies. Whether Britain's public spending and taxation are out of line with other countries is barely noted.

The text is littered with quotations from the speeches of Conservative ministers and dismissive descriptions of the views of anyone wetter than aid. The omission of references to the work of the Select Committees is glaring. The main written sources are



familiar figures and institutions of the right, the Institute of Economic Affairs, Brittan, Hawkins, Minford, Pryke (mark two), Seldon, Llewellyn, Burdon. The book does justice to neither the Thatcher Government nor the discipline of politics.

Robert Millward

Robert Millward is professor of economics at the University of Salford.

Socials success

The Tories and the People 1880-1935
by Martin Pugh
Blackwell, £17.50
ISBN 0 631 13806 4

Books with broad inclusive titles like this one usually turn out to promise more than they deliver. In this case a subtitle might usefully have been added to warn the reader that Martin Pugh's subject is not the Tory party as such at all, but quite specifically the Primrose League.

Admittedly the argument of the book is that the league was the main instrument by which the late Victorian Unionist party contrived to appropriate the popularity of the empire and even the Crown to its own party advantage; and hence that the league should be recognized as a large part of the answer to the old problem of the "art" and electoral success. But in the Tory party, as Lloyd George once not very wittily retorted, there were many flails. If we are looking for Tory democracy in action, by far its most genuine manifestation in this period was the rancorous Protestantism of Merseydale, based not on the sentimental pieties of Disraeli but uncompromisingly on bigotry and beer. Save for a brief acknowledgement, however, this - like the equally important reinforcement of Joe Chamberlain's Liberal Unionist caucus in Birmingham - lies, quite legitimately, beyond Martin Pugh's purpose.

The implication that his canvas extends to 1935 is misleading, too: it does so only to the extent that the league eked out a shadowy existence long after that date. What Dr Pugh has actually written is a study of the Primrose League - its membership, its geographical spread, its class composition and its political influence - in its high Victorian heyday. As such it is an admirable book: a lucid, meticulous and frequently eye-opening analysis of an institution which has undoubtedly had less attention than it deserves.

"It is a sobering thought", Dr Pugh writes in his introduction, "that the total paid membership of the LLP in 1900 has been put at 6,000, a figure equivalent to the paid membership of the Primrose League in Bolton at that time". The league, despite - or because of - its exclusively aristocratic leadership, was astonishingly successful in achieving a mass membership. Dr Pugh's analysis of the Cleveland "Habitation" reveals a full spectrum of occupations from eight gentlemen, a barrister and four solicitors at the top to 12 miners, 18 gardeners and 21 labourers at the bottom. Of course, class divisions were not broken down: they were reinforced by the hierarchy of the league with its fancy titles, its Knights and Dames, Harbinger and

Companions, Grand Jubilee Stars and Orders of Merit. But the point is that everyone had his or her place in the hierarchy, and by subscription or service could rise within it, making it a minor if not a large class.

The league, that only spawned the class, embraced both sexes. Dr Pugh is surely right to attach particular importance to this. The history of the participation of women in politics has tended to be written from the left, emphasizing the radical associations of feminism. But far more women - though without the vote - were active in politics, both speaking and organizing, through the league than through the explicitly suffragist movements. Through the league they both gained political experience themselves and accustomed their men to the idea of women's participation. Their advancement of the women's cause was the stronger because they did not campaign but just got on with it. Every Tory leader from Disraeli onwards, and most of the organizations of the party, were pro-suffrage: they knew the importance and effectiveness of the women of the league in spreading the Tory gospel on the ground.

One secret of the Primrose League's success was its identification of Toryism with the vaguest, quasi-mystical conceptions of patriotic virtue, to which practically anyone who was not an outright socialist or republican could subscribe. (It played down the

Church, so as not to exclude Catholics and dissenters.) The league began to decline in the Edwardian period precisely at the moment when these hitherto supra-political symbols - the monarchy, the empire, the House of Lords - were being explicitly subordinated to party politics by Chamberlain's tariff crusade, the crisis of 1909-11 and the Ulster crisis. Its second secret lives in the Tory party to this day, in the form of the very active women's sections and the Young Conservatives - the heirs of what were coyly called the "Primrose Buds". These are now integral institutions of the party, not independent front organizations like the league. In coming clean, they have lost their classless appeal: the Conservative Trade Unionists have never really taken off. But the bridge circles and discos of today serve the same function as the tea parties and popular recitals of the 1880s in drawing essentially unpolitical people into the party through social activities. The Conservatives have always been better than their opponents at that. It is a pity that the league's history should have been written by a Tory.

John Campbell

John Campbell is the author of "Lloyd George: The Goat in the Wilderness", "F. E. Smith, First Earl of Birkenhead", and "Roy Jenkins: a biography". His biography of Aneurin Bevan will be published in 1987.

Political contours

British Politics: continuities and change
by Dennis Kavanagh
Oxford University Press, £20.00 and £8.95
ISBN 0 19 876160 0 and 876161 9

Politics in England: persistence and change, fourth edition
by Richard Rose
Faber, £17.50 and £9.95
ISBN 0 571 13830 9 and 13515 3

Since there is no shortage of basic student texts on British politics, new books require some justification. The pace of change, not only in the political world itself but also in fashionable approaches and research findings among political scientists, offers a general case for them, but also a stiff test. Both Kavanagh and Rose sense this in their similar subtitles: both, broadly speaking, pass it. Both focus very firmly on the government of Mrs Thatcher's Britain, but place it in the context of the permanent features which constrain her. Kavanagh passes an especially critical test; his discussion of the strains on the cabinet and its committees produced by the Prime

Minister's approach provides just the right context in which to understand Michael Heseltine's resignation.

Neither can be right up to date, and it is particularly sad that neither author appreciated the significance of the findings of the 1983 British General Election Study which have been doing the rounds of academic conferences in the last two years and which appeared in book form as *How Britain Votes* last September. Both Kavanagh and Rose present accounts of the role of social class in British politics which Curcio, Heath and Jowell have now shown to be superficial and misleading. The critical role of social change in trends in voting behaviour, the clear distinction among the middle classes between the salaried and the self-employed and the continuing solidarity of the Labour vote among a more carefully defined (but declining) working class are features which must await the next round of new or revised textbooks.

The similarities between Rose and Kavanagh mean that one naturally focuses on the ways in which they differ. The titular distinction is wholly misleading: Rose talks as much about Great Britain as Kavanagh does and indeed gives slightly more attention to the distinctiveness of the three non-English parts of the United Kingdom.

Thus the two books are more complementary than in competition. Kavanagh's *British Politics* must be a leading candidate for the basic text in any university course in British politics next year, while *Politics in England* deserves to remain high on the list of strongly recommended supplementary reading.

Michael Steed

Michael Steed is senior lecturer in government at the University of Manchester.

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Fifteen years ago, most scientists faced with a problem requiring extended amounts of computation had two alternatives. They could either attempt the calculations with the aid of a hand calculator or if that prospect proved too formidable they could consider the use of a digital computer. If this was available, it would in all probability have been a large mainframe computer. To solve his problem, the scientist would have had to master, in succession, the art of programming in a high-level language, the operation of a card punch or paper tape punch to translate his program and data into a computer-readable form, and finally, the mainframe job control language needed to get his job into the computer and his results out of it.

Today, cheap microcomputers with the power, if perhaps not the speed, of the mainframe computers of the early

1970s, are readily available. Punched cards and paper tape are things of the past; and the visual display unit reigns in their place. If the scientist is an enterprising individual, he can now, at a modest price, need only ask himself two questions: which microcomputer should he use; and which language should he use to program and solve the problem.

If, however, the scientist has little or no experience of computing or computers, and he happens to be a biologist, then Ransom and Matela's book is an excellent introduction to the use of computers in a biological environment. Definition of the problem in computer terms, choice of a suitable computer, data structures, statistical analysis, computer graphics, the computer in the biological laboratory, and biological simulation are all dealt with in a very readable manner. Although in a book of 150 pages, there is space for dealing with these major topics in a brief and introductory fashion only, this is no more than the authors set out to achieve. Each chapter has a list of references for further reading on the topics discussed, which will greatly aid the novice who wishes to pursue the subject further. Three useful appendices cover computers and their organization, facing the computer, and a glossary of computer terms.

No doubt for reasons of lack of space, the authors avoid discussing the question of the choice of a programming language appropriate to a biological environment. From a question of choice on computer use circulated to 132 British university departments of biology during the period December 1981 to January 1982, however, they found that the vast majority of university biologists used the languages Basic and Fortran. So despite the efforts of the creators of more modern languages such as Pascal and C to popularize their creations, these two "old" languages remain popular with scientists.

Basic no doubt continues to be popular because it combines reasonable power with ease of learning. Alan Fielding's book is a comprehensive and up-to-date manual of Basic programming with a biological flavour. Though largely devoted to the use of Basic on microcomputers, it also contains an account of its use on large mainframe computers. Fielding distinguishes between interpreter and compiler versions of Basic and describes their advantages and disadvantages.

A whole chapter is devoted to structured programming, with the aim of encouraging the program writer to

produce code which can easily be read, maintained and modified, by himself as much as by others. The problems of achieving this desirable aim with a fundamentally non-structured, line-numbered language, which lacks the concept of local variables, are well described. There is also a useful chapter on program organization, with the sensible caveat that if speed of execution is critical, then the use of compiled Basic, or of some other language such as Pascal or Fortran, should be considered.

The value of the book is further enhanced by chapters on discs, files and operating systems, on computer graphics and image processing, and on the programming and use of computer models in biology. For the novice programmer, each chapter concludes with a list of problems to be programmed (answers to a selection of these are provided).

For those with neither the time nor the inclination to write their own programs, A. N. Barrett has provided a set of simple Basic programs incorporating the fundamental mathematical operations required for the analysis of experimental data. One group of programs deals with the solution of algebraic equations and the manipulation of matrices. A second group covers the subjects of plane and solid analytic geometry, coordinate transformations, conic sections and helices. A third group is devoted to the topics of fitting non-linear curves to data, numerical integration and elementary statistics.

The descriptive text accompanying the program listings assumes that the reader is mathematically literate, so that the non-mathematical reader will not find this book helpful, as use of the programs demands an understanding of the mathematical operations encoded in them. The programs are short and their logic easy to follow, but the high prompts and the identification of the numerical outputs of the programs are brief. No attempt is made to control the format of real numbers output by the programs, with the result that these are printed with up to nine significant figures. The programs may well be found useful, however, by those with a sufficient knowledge of Basic to incorporate the fundamental blocks of code into their own programs.

Leigh Hart

Leigh Hart is a biochemist in the drug development section of the Institute of Cancer Research, Sutton, Surrey.

Molecular input

A Handbook of Computational Chemistry: a practical guide to chemical structure and energy calculations
by Tim Clark
Wiley, £35.80
ISBN 0 471 88211 9

Computational chemistry, molecular modelling, rational drug design, and protein engineering are currently very topical disciplines which are all dependent on molecular orbital (MO) calculations to a greater or lesser extent. However, although there are only two books in print which deal exclusively with MO calculations, there is a plethora of MO books.

"How to do it" books dealing with the fundamentals and practical details of physical science techniques tend to be among the most popular, so that Tim Clark's book would seem to be a very timely book with the right credentials for success. This is particularly so in view of the fact that the use of computational chemistry is now rapidly spreading outwards from a nucleus of full-time "professionals" to embrace, for example, routine use by synthetic organic chemists for investigating the energetics of proposed reaction schemes.

In his introduction, Clark glosses over the problems of obtaining MO and MO computer programs and getting them running. Indeed, two out of the three programs on which the book concentrates (Gaussian 82 and MMP2) are only available on a commercial basis.

In the MMP section, the very condensed description of procedures for the calculation and minimization of atomic or molecular potential energy is too

superficial for it to be of much use to the neophyte computational chemist, at whom the book is aimed. The remainder of this section is devoted to a detailed examination of the input requirements and output from the MMP2 program. The input to the author's version of MMP2, however, is by way of old-fashioned punched cards. Moreover, the style of input described is geared to make the user perform tasks that would more properly be executed by the computer. When discussing output from the MMP2, the author includes 46 pages of photoreduced printout from the program, but then discusses this in a style that assumes a level of knowledge beginners will not possess. In fact, the MMP section is little more than a user manual for MMP2 - a program which will not be available in most academic laboratories because of its cost.

The following two sections, on semi-empirical and ab initio MO calculations have the same format, with descriptions of theory, input and programs. The semi-empirical MO section dealing with MNDO, MINDO/3 and MOPAC programs is prefaced by a description of the Z-matrix method of describing molecular structures and semi-empirical MO theory. But as the Z-matrix method of inputting structures is very tedious (in my laboratory it is hidden from the user by a computer graphics "front end") this discussion is not necessary. On the other hand, the qualitative description of semi-empirical MO theory is one of the highlights of the book, as is the MNDO and MINDO subject index which these programs have been applied.

Overall, Clark succeeds in providing a useful practical guide for beginners in MO calculations but falls rather badly in terms of MMP calculations.

D.N.J. White

D.N.J. White is reader in chemistry at the University of Glasgow.

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PROGRAM EVOLUTION

Processes of Software Change
M.M. Lehman and L.A. Belady
1985, 532pp., Cloth: \$40.00/£35.00 (UK only), ISBN: 0 12 442440 6
Paper: \$24.95/£21.50 (UK only), ISBN: 0 12 442441 1

Lehman and Belady were the first to recognize the phenomenon of program evolution: they pioneered its study, and the development of a software engineering discipline and a coherent programming process. In this book they bring together for the first time papers on the subject by themselves and colleagues to provide complete and accessible coverage.

FOUNDATIONS OF PROGRAMMING

Jacques Arzac
1985, 288 pp., \$29.50/£23.00 (UK only), Cloth ISBN: 0 12 064460 6
Recommends, recreation, and relaxation are the key words. The author studies the relationship between these three basic tools, and shows how to use them to construct clear, correct, and efficient programs.

INTRODUCTION TO THE GRAPHICAL KERNEL SYSTEM (GKS)

F.R.A. Hopgood, D.A. Duce, J.R. Gallop and D.C. Sutcliffe
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BOOKS

COMPUTER STUDIES

Lisp dialects

An Introduction to Lisp
by A. Narayanan and N. E. Sharkey
Ellis Horwood, £22.50 and £10.50
ISBN 0 85312 968 1 and 735 2
Performance and Evaluation
of Lisp Systems
by Richard P. Gabriel
MIT Press, £22.50
ISBN 0 262 07093 6

Lisp was invented by John McCarthy in the late 1950s as a functional programming language. That is to say, a computer program written in Lisp was thought of as operating upon input data so as to produce an output result, much as a mathematical function or equation does. In artificial intelligence (AI) research, however, the input data does not usually consist of numerical symbols nor do the programs normally carry out mathematical operations.

Just as the Arabic symbol "2" may represent the mathematical quantity "two", so the symbol "mother" can (in principle, at least) represent all of the varied and interconnected knowledge which together makes up what you know about your own mother. The ability to create and to manipulate such complex symbols seems to be a part of what we mean by "intelligent" human behaviour; and the fascination of AI is that researchers are beginning to discover the techniques by which they might be able to build similarly "intelligent" computer programs.

Lisp has become an astonishingly powerful and flexible research tool, although in the process its pure mathematical origins have become diluted. Almost all of the world's AI research has been done using Lisp or Lisp-derived programming languages; indeed, until recently there was nothing remotely as useful. An understanding of Lisp is therefore extremely important to anyone wishing to learn about AI. Writing in a relaxed style, Narayanan and Sharkey introduce Lisp in this context: indeed, two important chapters describe some of the uses of AI and discuss in some detail two quite substantial programs. To a considerable extent, they succeed in their aim of providing an easy introduction; and despite a few reservations students may expect actually to learn Lisp from it, rather than being totally confused as is sometimes the case with self-tuition books.

The authors take considerable pains to lead their readers forward rather than throw a barrage of facts at them. First, questions which might arise in the early part of the book but to which no proper answer can yet be given (for example, the precise meaning of "list processing") are acknowledged but calmly put off until other subordinate points have been made; and second, throughout the first four chapters the authors provide "anchor points" in the form of boxed areas on the page, each one containing a concise summary of the surrounding text. Readers who are not absolute beginners might use these in order to skip over basic points which they already know. In fact, these boxes continue to act as useful reminders much later in the text.

My main reservation about the book, however, is that Narayanan and Sharkey dismiss the increasingly common standard Lisps as "too complicated and large" for beginners. But the dialect chosen by them is unfamiliar in AI circles, and it seems a pity to teach readers even a few things which they may later have to unlearn. There are two unfortunate results of this: a few readers will find that their Lisps will not allow the crucial "DEFUN" function to be tailored to Narayanan and Sharkey's version either by the advice given on page 37 or that on page 200; and the two AI programs in chapter nine use "DE" instead.

Less importantly, the book has a very strong computer science flavour. In particular, the long explanation of recursion (a programming technique uniquely important in Lisp programs) is absolutely correct but requires the reader to visualize "stacks" and "memory locations", themselves somewhat imaginary objects, rather than recursion itself. AI research is more interested in the behaviour or its programs than in the behaviour of the underlying computer. For those who are underpinned by a little hard science, however, the book presents the salient points of Lisp clearly and in a carefully considered order. It is better than most self-tuition.

Richard Gabriel's book, a report on a series of comparative efficiency (benchmark) tests carried out on all the major dialects of Lisp, will be fascinating reading for Lisp experts rather than beginners. Because I am unlikely to be carrying out such tests myself, I would have preferred fewer details about the tests themselves and more about the various dialects. But as a manual for those who will, the book is a useful source of information and a valuable replacement for large chunks of Lisp folklore.

Tony Hasemer

Tony Hasemer is lecturer in artificial intelligence in the Human Cognition Research Laboratory at the Open University.

A collection of articles on Software Specification Techniques, edited by N. Gehani, A. A. McGettrick, has been published by Addison-Wesley at £21.95.

Ellis Horwood (Wiley) has published a third edition of C. B. Besant and C. W. K. Liu's Computer-Aided Design and Manufacture at £40.00.



This illustration of Herman Hollerith's punch-card system, featured on the cover of the 30th August 1890 issue of *Scientific American*, is taken from Stan Argutten's *Bit by Bit: an illustrated history of computers* (Allen & Unwin, £9.95).

Logo power

Teaching and Learning with Logo
by Allan Martin
Croom Helm, £8.95
ISBN 0 7099 3572 2

How can we teach people to explore the possible designs for any kind of useful system, be it social, political or personal? How can we teach people to make useful changes in existing systems? One of the first pieces of groundwork must be to give them some experience of formulating ideas explicitly and exploring the consequences, seeing how they mesh with other ideas and constraints. Although you may not believe that this can be done in the abstract, it must be worth testing.

Imagine that you have a class to teach. How can you give each of 30 pupils a chance to be in control of making up ideas and trying them out? In painting, for instance, a lack of skill can thwart ambition but a training in skills can easily put limits on the range of ideas.

What is needed is a way to open ideas readily, explore them fully, and make changes easily in the light of experience. Computers provide an unusually abstract medium for this. Any computer has certain features: a central processing unit, some memory, a keyboard and a display. Within the constraints imposed by the other features, you can fill the memory with computational models of whatever you can imagine. On a bare machine, this is too difficult. You must give up some of the memory to an operating system, and other software that could make easier to use the remainder of the freedom.

The programming language Logo, invented in the mid-1960s as a derivative of the artificial intelligence language Lisp, is one of the best compromises to date between expressive power on one hand and computer availability on the other. However, although in the 1970s Logo was powerful enough to run Logo-based languages, there are now excellent versions of Logo available. Indeed, some of the tools for easy animation of pictures and at least one version offers powerful processing. All owe a debt to Seymour Papert who first developed the features that allow you to get wonderful results from your early Logo efforts without having to know the computer's doxology.

There are many good texts about Logo programming, but very few books that show how it can be used in formal and informal education. The one does. Concentrating on the Logo scene, it describes Logo being used in many imaginative ways: primary, secondary and special schools; in homes. Besides the customary accounts of Logo used in making graphics explorations, there are accounts of Logo used in making poetry, and in studying language control technology and even in environment. These are presented in case-studies contributed by those directly involved, usually including transcripts of conversations to reconstruct some of the excitement and atmosphere of actually using Logo.

A good bibliography and survey of software and hardware with relevant addresses help to make this a useful book for anyone who has got some feel for the scope of what computers are being used in education or who wants to know what all the fuss is about.

Peter Ross

Peter Ross is lecturer in artificial intelligence at the University of Edinburgh.

BOOKS

COMPUTER STUDIES

Unix gurus

Operating Systems through Unix
by Glyn Emery
Chertwell-Bratt, £4.10
ISBN 0 86238 086 3
Unix: a practical introduction for users
by R. J. Whildett, R. E. Berry,
G. S. Blair, P. N. Hurley,
R. J. Nicot and S. J. Muir
Ellis Horwood, £21.50 and £9.50
ISBN 0 85312 863 4 and 950 9
Unix for Super-Users
by Eric Fosdy
Addison-Wesley, £12.95
ISBN 0 201 14228 7

A glance at the shelves of any technical bookshop will confirm that writing books about Unix is the current growth industry in computer science. This reflects not only the position of Unix as the de facto standard for computer science work, but also the rapidly growing commercial popularity of the system as it becomes established as a standard operating system for the more powerful microcomputers and for minicomputers. The thought of the one-and-a-half million Unix licences so far issued must bring a gleam to the eye of many a publisher, and dreams of riches to underpaid academic authors. The need for such a flood of books

can be seen as soon as you look at the Unix system manuals. The bible for the early Unix users was usually a well-thumbed Xerox-of-a-Xerox of the *Unix Programmer's Manual*. This slim volume (less than an inch thick) stands as an example of the art of documentation that will never be equalled. It took brevity and terseness to heights never dreamed of before or since: not only did every word count, every punctuation mark counted as well; and experienced Unix wizards would read and re-read the manual, gleaming something new every time. It was definitely not suitable for a beginner, although the system did come with a superb tutorial introduction. When Unix went commercial, the technical writers were unleashed with the usual consequences: the documentation increased to 14 closely-printed volumes, occupying a couple of feet of shelf space. Whereas before, books were needed to expand the system documentation, now they are needed to condense it.

The vast majority of Unix books are, like Unix, a practical introduction for users, intended for the beginner who wants to make straightforward use of the system. A few, like *Unix for Super-Users* are aimed at the system manager who needs to know a good deal about the internal organization of the system. The title of the third book, *Operating Systems through Unix*, suggests that it falls into a third category: texts on operating systems that use Unix as a teaching vehicle, but in fact it is really just another book about Unix.

I had high hopes that Emery's book, one of a series of short inexpensive students texts, might suit my first-year students. Having taken a charitable view of the minor inaccuracies in the potted history of Unix that starts the book, however, my hopes began to fade when I found the author confused

on the theoretical powers of the calculating engines. Ada gave us the felicitous analogy: "the Analytical Engine weaves algebraical patterns just as the Jacquard loom weaves flowers and leaves." Stein objects to the term "algebraical" but the use is precise. She then fails to distinguish clearly between an engine developing algebraic results in literal notation, and an engine developing symbolic results. By the time she comes to Babbage's general views on the powers of the engines the confusion is complete.

Anthony Hyman
Anthony Hyman is author of "Charles Babbage: pioneer of the computer" (Oxford University Press, 1982).

ASLIB, the Association for Information Management, has published the proceedings of a conference on translating and the computer held in London in November, 1983, as *Tools for the Trade*, edited by Veronica Lawson, at £19.00.

When the notes to Menabrea's paper were in proof Babbage was already adding to them. Two ideas were floated: an introduction by Babbage discussing the history of government support for his engines; and developing the notes into a far longer study. An outline of the relations of successive governments with Babbage's engines was in any case published shortly thereafter, and one might have thought the second idea of greater general interest. *A fortiori* is that so in a book about Ada. Besides, she was not going to tolerate major alterations to her first paper at proof stage for any reason.

Ada was briefly an enthusiastic student of mathematics, but the story of Ada as the world's first programmer is nonsense. This has been clear for more than a decade but the story is slow in dying. Indeed, in so close a collaboration as Ada and Babbage's collaboration as Ada and Babbage's it is futile trying to distinguish individual contributions, save in one respect: the technical content belongs entirely to Babbage. This is crucial, as the notes are the most important document we possess about Babbage's general views



Ada Augusta Byron, Countess of Lovelace.

Babbage's early work. De Morgan, and the preparation of a paper by Menabrea, later prime minister of Italy, on Babbage's analytical engines. Then there are the celebrated notes, prepared by Ada and Babbage together, to Menabrea's paper. A clear, simple sketch of mathematical development, however, is actually a very difficult thing to achieve, requiring a knowledge of mathematics which seems far beyond the author's command.

When the notes to Menabrea's paper were in proof Babbage was already adding to them. Two ideas were floated: an introduction by Babbage discussing the history of government support for his engines; and developing the notes into a far longer study. An outline of the relations of successive governments with Babbage's engines was in any case published shortly thereafter, and one might have thought the second idea of greater general interest. *A fortiori* is that so in a book about Ada. Besides, she was not going to tolerate major alterations to her first paper at proof stage for any reason.

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Unix, emphasizing the system-management aspects - houting the system, creating and controlling users, adding new devices, maintaining the file store, tweaking the performance, and keeping out the "hackers" who try to get illicit access. Examples of the main system programs are given in C; and four appendices summarize useful reference material, including some otherwise undocumented features of the C preprocessor.

I had thought that after seven years I knew Unix inside out and backwards, but my understanding has been enhanced by the insights I found in this book. It will be invaluable to anyone who has to manage a Unix system; and it should be compulsory reading for any computer science student who uses Unix in his course. But before telling your students to read it, you had better make sure that your system is really secure, since it is the universal ambition of computer science students to become super-users themselves.

David Barron

Professor Barron is head of the department of computer studies at the University of Southampton.

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BOOKS

COMPUTER STUDIES

Meaning business

Cobol for Mainframe and Micro
by Derek Watson
Chattwell-Bratt, £4.99
ISBN 0 86238 082 0
Introduction to Cobol: a primer and programming guide
by R.A. Overbeck and W.E. Singletary
Addison-Wesley, £15.95
ISBN 0 201 16310 1

The "common business oriented language" (Cobol) was developed in the late 1950s by the Conference on Data Systems Languages (CODASYL) as a response to the needs of commercial and military organizations for a common basis for the building of business applications software. Its developers were motivated by the desire to define a language which was portable be-

tween various machines and operating systems (thus allowing programs written in one environment to be used in another with minimal rewriting), readable by programmers and non-programmers alike (thus, in theory, reducing the chances of programming errors going undetected and reducing the cost of program maintenance); and oriented towards the characteristics of business applications (by providing, for example, powerful file and string handling facilities, a report definition method, and a mechanism for developing programs as collections of quasi-independent modules).

The initial proposal in 1960 was for a large (and in many ways clumsy) set of facilities. This was revised in 1961, 1968, 1974 and 1985 - each revision modifying the language's features in response to its users' stated requirements. Although most of the Cobol implementations in current use are based on the 1974 proposal, the 1985 proposal, which incorporates CODASYL's response to the "structured programming" movement of the mid-1970s, can be expected gradually to change this.

Throughout its development, the language has had its critics, particularly among the academic community, who bemoan its structural inelegance and verbosity. However, the scale of its use (currently estimated at somewhere between 50 and 80 per cent of programming in business data processing) indicates that the business com-

munity is unsympathetic to this opinion. The criticisms from that quarter relate to the inadequacy of its database-handling facilities and its lack of provision for the development of interactive applications (for example, applications such as airline flight inquiry systems rather than, say, bank statement generating systems).

Derek Watson's undergraduate textbook is a straightforward, practical introduction to the facilities and use of Cobol (especially the CIS-Cobol and IBM personal computer Cobol implementations of the 1974 proposal). Unlike many recent texts, it is not an apology for Cobol; it does not set out to show how Cobol can be made to look quite like, say, Pascal (which was developed for a different purpose), but presents all of the language's special features. This is done with ample illustration.

By including a section on interactive Cobol (as provided by CIS-Cobol and IBM Cobol) Watson neatly complements existing texts which concentrate on Cobol as a batch-oriented, mainframe-based language, even though its use for microcomputer-based applications is growing. Its conciseness should make this text an attractive support for any introductory Cobol course for students with an elementary appreciation of computer systems and their applications.

Overbeck and Singletary's book differs from Watson's in many respects. It is overtly didactic in organization; its approach to Cobol is from the traditional batch-oriented mould; it presents Cobol firmly within the ethos of business data processing; and it aims to provide an introduction to computer systems in business, as a training for the business application programmer.

As with Watson's text, numerous illustrations are provided, but here the Cobol facilities covered are much more restricted: no mention is made of non-sequential file organizations; and interactive applications are glossed over. Instead, the emphasis is on the history of computers in the United States, and on program development "methodology", including approaches to program design (structured flowcharts, pseudo-code, Warnier diagrams) and debugging, and the organization of programmer teams.

This book is very much broader in context than Watson's. Its attempt at a self-contained introduction to computing and data processing, however, is probably too narrow to be of use to students of computer science.

Richard Whittington
Richard Whittington is lecturer in computer science at the University of York.

Structure and Interpretation of Computer Programs
HAROLD ABELSON & GERALD JAY SUSSMAN
The book should be obligatory reading for anyone involved in teaching computer science at degree level: it will convince them that inside computer science there really is a true science trying to get out.
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THE MIT PRESS
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CAMBRIDGE

Expert Systems 85

Proceedings of the Fifth Technical Conference of the BCS Specialist Group on Expert Systems
MARTIN MERRY

The papers comprising this volume reflect the two streams of the conference, techniques and applications. Expert systems are making significant contributions to an ever-widening range of activities and this book reports from practitioners at the forefront of this expanding field. This volume will be essential reading for all who wish to keep pace with its developments.
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BCS Monographs in Informatics
Forthcoming (March 1986)

Numerical Recipes

The Art of Scientific Computing

WILLIAM PRESS, BRIAN P. FLANNERY, SAUL TEUKOLSKY and WILLIAM T. VETTERLING

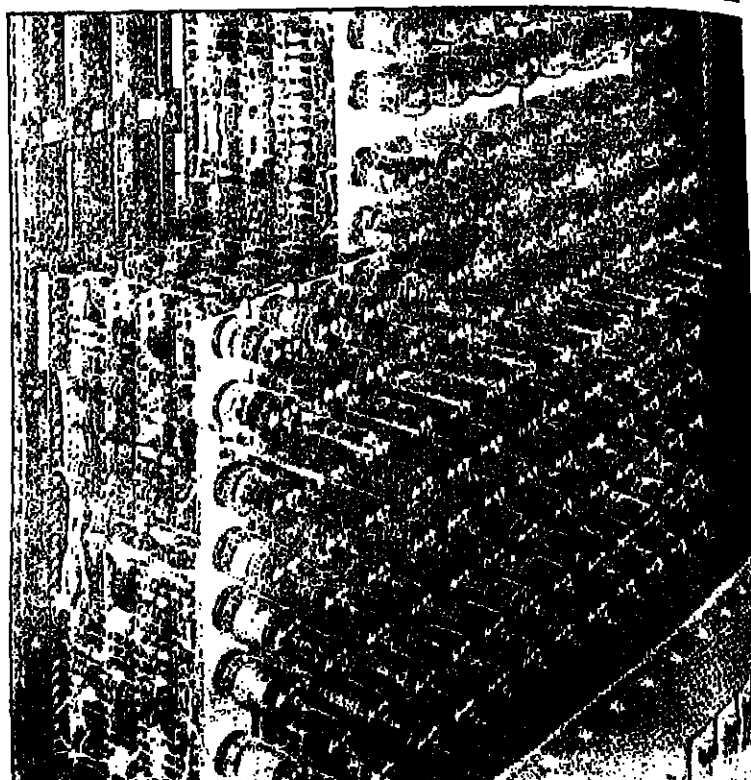
This book aims to teach the methods of numerical computing, and as such is a practical reference and textbook for anyone doing numerical analysis. The authors provide the techniques and computer programs needed for analysis and also advice on which techniques should be used for solving certain types of problems. They aim to show that the practical methods of numerical computation can be simultaneously efficient, clever and clear.

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All forthcoming (March)
Cambridge University Press
The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, England



This photograph of the electronic panel of the Defense Calculator, designed by IBM in 1951, is taken from C. J. Bashe, L. R. Johnson, J. H. Palmer and E. W. Pugh's *IBM's Early Computers* (MIT Press, £27.50).

Digital discourse

Getting Computers to Talk Like You and Me: discourse context, focus, and semantics (an ATN model)
by Rachel Reichman
MIT Press, £19.95
ISBN 0 262 18118 5

The message in this essay is simple: before computers will be able to make sensible responses to what we say to them, we need to know about the rules which govern our own communications. There are rules of human discourse which dictate the range of permissible responses to a statement, and these rules must be used when developing mechanical systems which will be able to interact linguistically with their human operators. Rachel Reichman's book is an attempt to specify the rules of discourse in a form which can be modeled with a computer simulation.

Demonstrating that the model runs satisfactorily in simulation, however, is a very different proposition to developing a machine which uses the rules embodied in the model to make satisfactory responses to human verbal inputs. Reichman's model is therefore a first step towards the development of efficient human-computer interaction. Without the rules of human discourse, the computer will founder on seeming topic shifts as:

ME: Get me the file on
IT: It'll take some time, please wait
ME: There are children starving in the world you know

In order to communicate with humans, the computer will need to know the rules of dialogue which are being used, and to take account of the overall structure of that dialogue.

We know that we use rules of discourse because we can follow indirect conversations such as the one above, and we can recognize when an inappropriate input has been made (for example, suppose IT had replied: "Do you worry about world poverty?" as Joseph Weizenbaum's program ELIZA might do). Children take less notice than adults of dialogue entries, suggesting that the discourse rules have to be learned. What Reichman's model does is to provide a "grammar" of discourse for the receiver to place the incoming message into a context or sub-context within the dialogue. When we hear certain keywords, we know that certain controversial moves are being made, and these may signify that a new context space is being used. So, if a sentence starts with "by the way", we are being told that a tangential topic is being introduced, but that the current context space is being vacated only temporarily; and when we then hear "anyway" at the beginning of a later sentence, we know that a return

to the interrupted context is about to take place. In a similar vein, the keywords "yes, but" indicate that we are about to enter a context space which contains an indirect challenge to our argument. Discourse is seen as comprising a set of constituent contexts. Moving from one context to another requires a conversational marker which indicates the relevance of an utterance.

Part of this essay takes the form of a simulation of a conversation analysis based on the "augmented transfer network" (ATN) approach to sentence analysis. Rather than a network of "states" which changes according to the next word in a sentence, Reichman's network changes according to the next sentence in the conversation. It is not entirely clear, however, why an ATN is the best pattern for the discourse analysis; and given that ATN grammars fail to account adequately for human linguistic performance, for human linguistic performance being thrown out prematurely. The concept is to produce a machine which operates on the same principles of discourse as humans, then we must be sure to get the right model of human behaviour.

The emphasis on a model based on ATN grammars might prove to be justified, if initially questionable, but there are other emphases in Reichman's essay which are downright misleading. Why, for instance, is it so important so early in the discussion for the reader to understand that the sentence "the pebble thinks" is ungrammatical? Not only does this statement confuse me, but I don't see why it was necessary to shake the foundations of the conventional understanding of the distinction between something which is ungrammatical and something which is meaningless. More seriously, the discussion of discourse is reduced in the context of our need to produce communicating machines (there is, incidentally, nothing in this book on talking rather than communicating); and for this to be possible, we are instructed, the machines will have to be able to think. Both the plausibility and the need for thinking machines are seen as axiomatic. It might be more appropriate at least to acknowledge John Searle's criticisms of the very idea of machines which can understand language, if not reply to them. Machine thinking is not demonstrated, and its necessity is not demonstrated. While the underlying message is undoubtedly correct - if we are to be able to communicate naturally with computers, then we need to know more about the structure of communication between humans - the bulk of the book is concerned with the principles of natural discourse and those principles. This left me wondering about the emphasis implied by the book's title.

Geoffrey Underwood
Geoffrey Underwood is lecturer in cognitive psychology at the University of Nottingham.

BOOKS

COMPUTER STUDIES

Technical expertise

Expert Systems: a practical introduction

by Peter S. Sell
Macmillan, £5.95
ISBN 0 333 37264 6

The Hitch-Hiker's Guide to Artificial Intelligence: BBC Basic version
by Richard Forsyth and Chris Naylor
Chapman & Hall, £8.95
ISBN 0 412 26970 8

A Guide to Expert Systems
by Donald A. Waterman
Addison-Wesley, £16.95
ISBN 0 201 08313 2

Like it or not, expert systems are very much in the limelight. Even the most casual observer of the computing scene cannot fail to have noticed the plethora of articles, periodicals and books offered for the satisfaction of the apparently insatiable appetite of expert systems users, builders, critics and investors. Indeed, in the academic computing world, it seems like every other undergraduate and postgraduate is tackling an expert systems project.

Researchers in artificial intelligence (the stable from which expert systems have bolted) are pursued by governments to collaborate with industry, by venture capitalists to launder industry's profits, and by publishers to record their latest ideas. To many computer scientists this excitement results from the straightforward view that expert systems is the most important topic in computer science. Given this situation, these three books - two on expert systems and one on the more

general topic of AI - make illuminating reading.

Expert systems have emerged as a practical application of the fruits of research in AI, and much has been written of the computer representation and application of human expertise in solving technical and sometimes difficult problems. The expert systems most frequently mentioned have been of the first generation, such as Mycin (for microbial diagnosis and treatment) and Prospector (for mineral exploration). An earlier pioneering system Dendral, for the identification of molecular structures, has received less attention, even though it has been in regular use by many chemists for nearly two decades.

A perspective wider than the emulation of the problem-solving ability of a human expert encompasses computer systems which employ an explicit representation of some human knowledge in conjunction with some inference mechanism as a means of applying that knowledge in some useful manner. The study and construction of such intelligent knowledge-based systems is just one of four research areas supported and coordinated by the Alvey research programme - the other topics being very large scale integration, software engineering, and the machine interface.

Applications areas which had previously proved difficult or were thought impossible to computerize have been successfully tackled with knowledge-based techniques. The success of the Xcon system (for configuring Vax computer systems) is a notable example. The Puff system routinely provides expert analysis at a California medical centre for pulmonary function disease. In Britain, an expert system is being used to help control an industrial cement kiln. On a much smaller scale, hand-held computers are using expert systems technology to give advice on social security benefits and support understaffed medical workers in the Republic of Chad.

The first noticeable difference between expert and knowledge-based systems and programs written in languages such as Pascal, Fortran, Cobol and Basic, is the separation of the

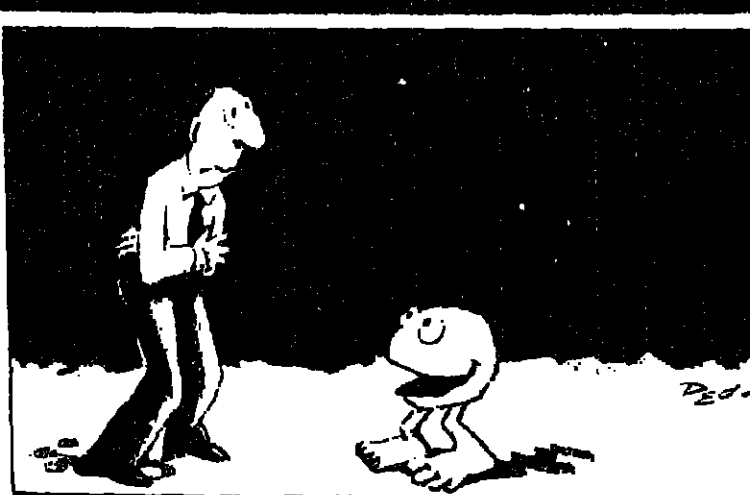
Micro marriage

Microprocessor Systems Engineering
by John Ferguson
Addison-Wesley, £12.95
ISBN 0 201 14657 6
The Principles of Computer Hardware
by Alan Clements
Oxford University Press, £25.00 and £12.50
ISBN 0 19 853704 2 and 853703 4

The year 1969 was a momentous one in the field of electronics. For in that year a Japanese calculator manufacturer, Busicom, approached a year-old American company making semiconductor memories, with a proposal to produce a set of custom-designed integrated circuits for a new line of calculators. Intel designer Marcian Hoff had previously worked in the field of minicomputers and suggested that an alternative approach to the problem was to integrate a simple computer central processor unit into silicon. This would move the emphasis away from the conventional hardware structures oriented regime. This was born the first microprocessor - the 4004.

This marriage of convenience between computers and electronics was to produce a dichotomy in the microprocessor world, which has persisted to this day. Electronics departments, viewing the microprocessor as a programmable integrated circuit, are concerned with such factors as timing relationships, power levels and programmable interfaces. The production of the string of binary digits required to sequence the hardware is regarded as a necessary evil. Computer science departments, on the other hand, concern themselves with techniques which develop software from abstract concepts into code. The underlying electronic reality is of no undue concern. Indeed, it comes as a surprise to many students brought up in this atmosphere that microprocessor chips are not produced with built-in keypads. Naturally, both camps claim to be the sole repository of the one true truth.

To some extent, these two texts reflect this dichotomy. John Ferguson unequivocally places his book in the



"Think back . . . which keys did you press?", a cartoon by Eldon Dedral from *A Much, Much Better World* (Microsoft/Penguin, £6.95).

knowledge base, the factual and heuristic knowledge peculiar to the application domain, and the controlling program which determines how problems should be solved. Conventional computer software inextricably mixes the descriptive knowledge of a problem with the procedural information necessary for its solution.

Peter Sell's book, intended as a concise introduction, lacks the breadth of examples provided by Waterman in his much more detailed encyclopaedic presentation. Indeed, Sell's exposition is a strange mixture of shallow accounts of the characteristic features of an expert system and detailed analysis of their inner workings. His book is therefore more likely to appeal to experienced computer programmers who are interested in trying their hand at building their own system. But the description of the four expert systems Dendral, Mycin, Prospector and Xcon in as many pages does not constitute an adequate illustration of how these classic programs behave.

Sell's book is very much one man's view of how expert systems could be built. The Pascal-like pseudo-code used to outline how a budding expert system builder might go about his business clouds what should be a much

clearer picture of the separation of the descriptive representation and the deductive nature of the problem-solving process.

Now, if a Pascal-like language is inadequate to present a do-it-yourself approach to expert systems, then what about the use of Basic to implement not just expert systems but other problem-solving programs in AI in general. Forsyth and Naylor attempt to do just that - and for an audience with relatively unsophisticated knowledge of computer science - the title of their book fortunately not being entirely indicative of its contents. However, even though the authors' aim is laudable, its likely fulfillment is immediately inhibited by the difficulty of some of the areas they have chosen to cover and also by the very limitations of a computer language such as Basic.

Considering that both authors have written separate texts on expert systems, their chapter on this topic is one of the weakest in the book. Not only does it contain some very idiosyncratic terminology, it will fail to motivate the interest of the reader who is expected to type into a computer some fairly large Basic programs. Indeed, the authors admit on page 123 that Basic

may not be the most suitable computer language in which to implement programs which represent expertise, play games, parse natural language, and simulate machine learning and vision. By this time, however, I would expect the programmer's stamina to be seriously tested. This is a pity, since the next two chapters on problem-solving methods and computer game-playing strategies make most stimulating reading. I was pleased to see that the authors express serious misgivings about the military uses of AI.

Waterman's book is really in two parts, the first of which provides a reasonably thorough account of what expert systems do, how they are constructed, the tools needed for their construction, and the difficulties likely to be encountered during their development. Rarely does the discussion become technical or try to indicate other than in strategic terms how expert systems should be built. Its strength lies in the fine balance between well-chosen examples and the thoroughness of the explanations and coverage. Part two is a compendium of references, tables of commercial implementations, and application areas - all cross-indexed for flexible access.

The major drawback to Waterman's book is the paucity of reference to the considerable and relevant work on expert systems in Europe and in Japan - although I doubt that the author would see such omission as weakness. Recently, in a national newspaper, a professional observer of innovative technology argued that British activity in expert systems is likely to be overshadowed, even swamped, by American competition. Although I am inclined to disagree as far as research is concerned, as far as the commercial exploitation of, and the production of textbooks on, expert systems or AI is concerned I am likely to agree.

Peter Hammond
Peter Hammond is an advanced research fellow in the department of computing at Imperial College, London.

the tendency would then be to substitute "debugging facilities" for an understanding of the problem. The book makes the same mistake as early books on conventional programming languages in that the distinction between syntax and semantics is not carefully drawn. This is an especially important distinction in Prolog, in which the relationship between variables and their identifiers is unlike any other programming language. For example, in chapter four, the data structure known as the "list" is described as containing any syntactically correct element. This is misleading. Lists, or any other data structure for that matter, may contain components which have no syntactic representation at all. Unless carefully taught, the beginner can then become confused between what a list may contain and how a list is written.

Prolog variables also need careful treatment. Variable can act as named "holes" in data structures, to be filled in gradually as computation proceeds. Variables may also co-refer, so that like-named holes are filled simultaneously. This feature of logic is a unique and powerful programming concept of much value to the beginner. Yet the authors give it little attention. There are two case-studies. But although these could have provided a good opportunity for the authors to discuss in depth how to construct programs consisting of more than a few procedures, this does not happen. Instead, we are presented with bare program listings with minimal comment. No explanation is given of idiomatic techniques not mentioned previously; and the opportunity is not taken to explain the purpose of the potentially confusing "cut" goals. Moreover, the index, a vital component of a primer text, contains only the bare minimum: the names of built-in functions and about 30 general concepts.

Although the overall plan of the book is sensible, it falls short on pedagogical details. It will need to be supplemented by careful teaching if readers are to gain an understanding of the subject.

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Peter Hammond

Peter Hammond is an advanced research fellow in the department of computing at Imperial College, London.

Prolog primer

Prolog Programming and Applications
by W. D. Burgham and A. R. Hall
Macmillan, £7.50
ISBN 0 333 39159 4

Within the past five years, the computer programming language Prolog - the unique character of which can be attributed to its particular way of representing concepts and processes in terms of symbolic logic - has attracted much attention throughout the world. Prolog is highly idiomatic. It has been shown to solving certain non-deterministic search problems of the 1970s

usually encountered by artificial intelligence researchers; and it has helped to inspire the so-called "new generation" of computer designs. But Prolog is not the best way to solve all problems, a truth that tends to be neglected among much journalistic hype that surrounds popular reports of the new generation of computers. *Prolog Programming and Applications* is a primer intended to provide an elementary introduction to Prolog so that the reader can start to write simple programs after a short period of study. Its authors fully expect readers to progress quickly to a more definitive text; and in this respect, they specifically mention W. F. Clocksin and C. S. Mellish's *Programming in Prolog* (Springer, 1981). It is easy to see why: the style and order of presentation of that book are closely comparable with their own.

The book has some good points. It relies on a single dialect of Prolog - the

Edinburgh syntax - which has established itself as a *de facto* standard. Also, it is short (114 pages) and well laid out, enabling the reader to discriminate easily text from Prolog program from computer output. On the other hand, the book's weak points may cause problems for the very beginners at whom it is aimed. First, fundamental and unfamiliar concepts are presented - almost summarized - in quick succession in the first chapter. Such a treatment, especially when variables are concerned, could invite misconceptions that the authors do not attempt to remedy later. Second, there is not enough explanation of recursion and backtracking - only one 14-page chapter describing all of recursion, arithmetic, and the "cut" feature for controlling backtracking. Given this, the beginner might be tempted to regard the execution of Prolog programs as almost magical. When a faulty program produces unexpected results,

William Clocksin

William Clocksin is an assistant director of research at the Computer Laboratory, University of Cambridge.

Department of Education
for Northern Ireland
Centre for Learning Resources

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The Department of Education is establishing a Centre for Learning Resources which will commence operation in September 1986 and applications are invited for the post of Director.

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7. Power Systems

c) Mechanical Engineering Department

1. Process Instrumentation & Control
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Further particulars can be obtained from the Secretary, Christ Church, Oxford, or from the Secretary, Christ Church, Oxford, or from the Secretary, Christ Church, Oxford.

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giving their curriculum vitae and the names and addresses of three referees.

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Holidays and Accommodation

BRISCOLL HOUSE HOTEL, 200, single rooms, apply to 173 New Road, London E16 1JH. Tel: 01-559 1155.

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Overseas continued



NEW SOUTH WALES
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ASSOCIATE HEAD

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The School of Computing Sciences offers a four-year Bachelors degree, a postgraduate Diploma, Masters degrees by research and thesis and by coursework. A joint Doctoral program with Macquarie University commenced in 1985. The School incorporates the Centre for Advanced Computing Sciences, a Key Centre of Teaching and Research established by the Australian Govt. in 1985.

Academic staff are encouraged to carry out research and to undertake a limited amount of high-level consulting to government and industry. The Associate Head will work with the Head of the School in day-to-day management of the School and in providing academic leadership to the School as a whole.

The successful applicant will have high academic qualifications, probably at doctoral level, and will possess specialist knowledge and experience in the Information Systems area.

Closing date: March 27, 1986. Ref. No. 86/034

SCHOOL OF BIOLOGICAL AND BIOMEDICAL SCIENCES

DEPARTMENT OF APPLIED BIOLOGY

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In 1986, a new degree programme in Urban Horticulture will be offered. It will include nursery production and management, the selection, micropropagation and breeding of new cultivars, especially Australian natives; open space establishment, maintenance and management; and vegetation strategies. The programme will run in close liaison with the Ryde School of Horticulture.

A Senior Lecturer is required to initiate and take responsibility for the co-ordination and development of the programme.

Applicants should possess appropriate tertiary qualifications, preferably at the doctoral level. Extensive experience in appropriate aspects of horticulture or arboriculture together with an ability to liaise effectively with industrial organisations is essential.

Closing date: March 22, 1986. Ref. No. 86/026/01.

CONDITIONS

Fares and contribution toward removal expenses are provided for overseas appointees. A Housing Allowance is available plus opportunity exists to contribute to Superannuation. Approval may be given for undertaking limited consulting work.

An information sheet outlining duties and conditions relating to the positions is available from the address below.

Applications should include a detailed curriculum vitae and the names and addresses of three referees. In reply please quote ref. no. and forward to:

The Director,
N.S.W. Government Office,
66 Strand, LONDON, WC2N 6LZ

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Banking Law
Company Law
Conflict of Laws
Constitutional Law
Contract Law
Criminal Law
Land Law
Revenue Law

Agency & Partnership
Equity & Trusts
Evidence
Legal Method & Process
Remedies
Restitution
Shipping
Torts

Gross annual emoluments range as follows:

Lecturer S\$28,300 - 58,880
Senior Lecturer S\$53,160 - 94,080
Associate Professor S\$82,430 - 113,530
(STG £1 = S\$2.97 approximately)

The commencing salary will depend on the candidate's qualifications, experience and the level of appointment offered.

Leave, medical and provident fund benefits are